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Large Ore Storage in a Limited Space

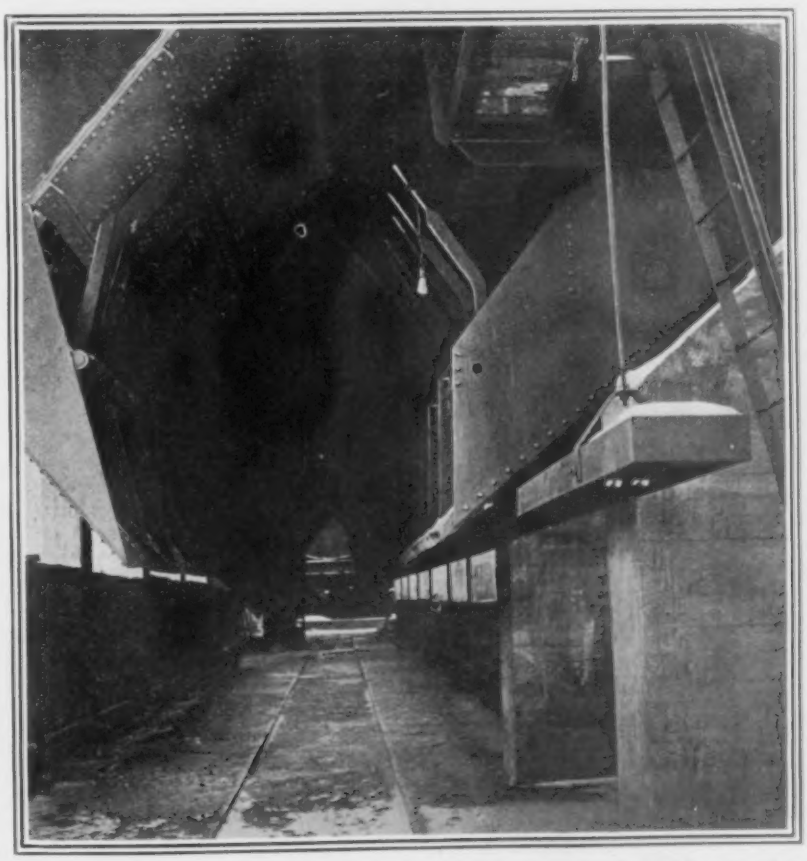
Double Bin System of Iroquois Iron Co. Solves Material-Handling Problems and Results in Short Haul to Skip Cars

BY F. L. PRENTISS

THE system for handling ore, coke and limestone at the No. 5 blast furnace of the Iroquois Iron Co., South Chicago, is an unusually interesting installation, particularly because of the construction of the bins in a double row instead of a single row as is the usual practice. This bin system was built to serve this company's new blast furnace, having a daily capacity of 600 tons of pig iron. It is directly adjacent to the No. 4 furnace with which it has a common cast house. A description of the No. 5 furnace appeared in THE IRON AGE, issue of April 18, 1918.

The design demanded large storage capacity, the provision of this capacity with the available track space being limited because these bins must be adjacent to the set serving the No. 4 furnace. At the same time it was necessary to make connection with an existing steel trestle, and maintain the same elevation of service tracks above the yard level as existed with the bins serving No. 4 furnace, instead of providing higher bins and consequently higher tracks. These requirements precluded the use of a bin system other than the double opposed type. The objects obtained include large capacity with space of unusual width in a short length of bin construction without necessitating high trestle tracks, the concentration of the bin system closely about the skip pit, and the elimination of long trestle tracks. An important feature is that all material other than coke, which is directly loaded into the skip car, is handled from the bins to the skip car with an average travel of the scale car of only 54 ft., and the maximum travel to obtain ore from any bin is only 106 ft. The bin system was designed and erected by Arthur G. McKee & Co., contracting engineers, Cleveland.

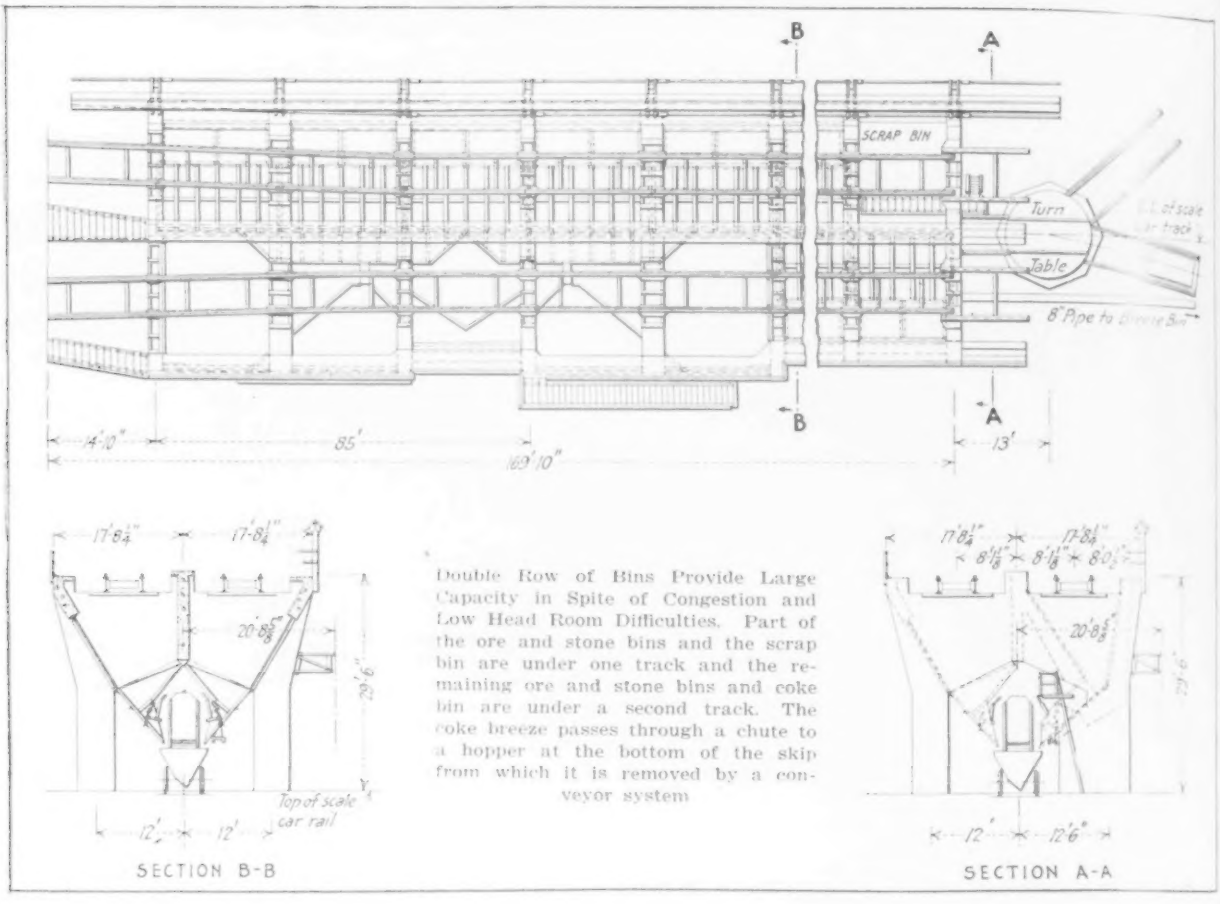
The system consists of fourteen ore and limestone bins, one scrap bin, and one large central double discharge coke bin. Nine of the ore and limestone bins, together with one scrap bin, are under one service track on the outside or storage yard side, and five ore and stone bins and the coke bin are under a second service track on the furnace side of the system. The discharge from both sets of bins is to a scale car running on a single straight track serving all the bins.



Double Bin System Discharging to the Scale Car on a Single Track. The ore bins are at the left and at the right behind the discharge gates of the scrap bin

The five ore and limestone bins opposite the coke bin are 17 ft. long and the other nine are 14 ft. long. All have a uniform width of 17 ft. 8½ in. The coke bin is the same width as the ore bins and 85 ft. long. The stone and ore bins have a capacity of 32,000 cu. ft., the capacity of the five wider bins being 2620 cu. ft. each, and that of the nine narrower bins 2100 cu. ft. each. The capacity of the coke bin is 14,700 cu. ft.

The sectional view of the ore and limestone bins shows the Baker



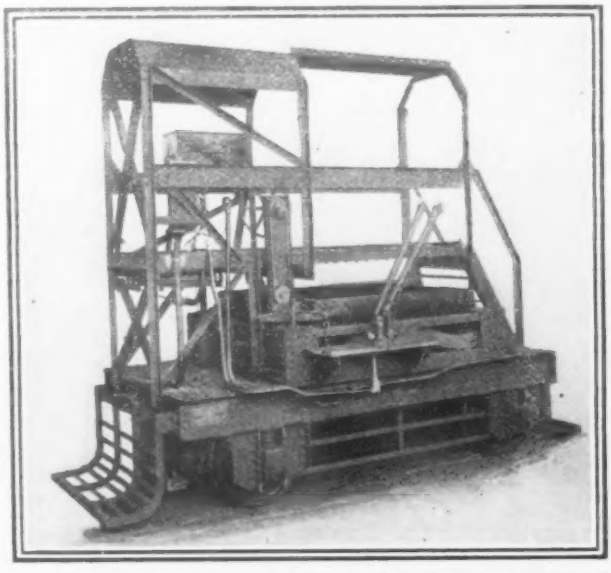
Double Row of Bins Provide Large Capacity in Spite of Congestion and Low Head Room Difficulties. Part of the ore and stone bins and the scrap bin are under one track and the remaining ore and stone bins and coke bin are under a second track. The coke breeze passes through a chute to a hopper at the bottom of the skip from which it is removed by a conveyor system

type of suspension as adopted to meet the requirements of their construction. Two adjoining bins with a trestle track over each have the general form of one large hopper bin divided in the center by a concrete partition, and both discharge to a central scale car. All the supporting structure of the bins is of reinforced concrete and the remainder of the entire bin system proper is made of steel, chiefly plates in tension, the containers being of steel.

The coke is spouted from the two sides of the coke bin over sets of McKee type of cascade screens directly into the skip cars, thus avoiding the rehandling of coke as is common with most bin systems. The coke bin is so arranged under the inside or coke track that it will not interfere in any way with the ore or stone bins directly opposite and under the outside track. This arrangement results in the very short average scale car run of less than 60 ft. This naturally results in economical filling of the furnace. The coke breeze after passing through the screens drops through an inclosed chute to a small hopper at the bottom of the skip pit from which point it is conveyed by a steam jet conveyor system to a coke breeze bin erected some distance beyond the bin system.

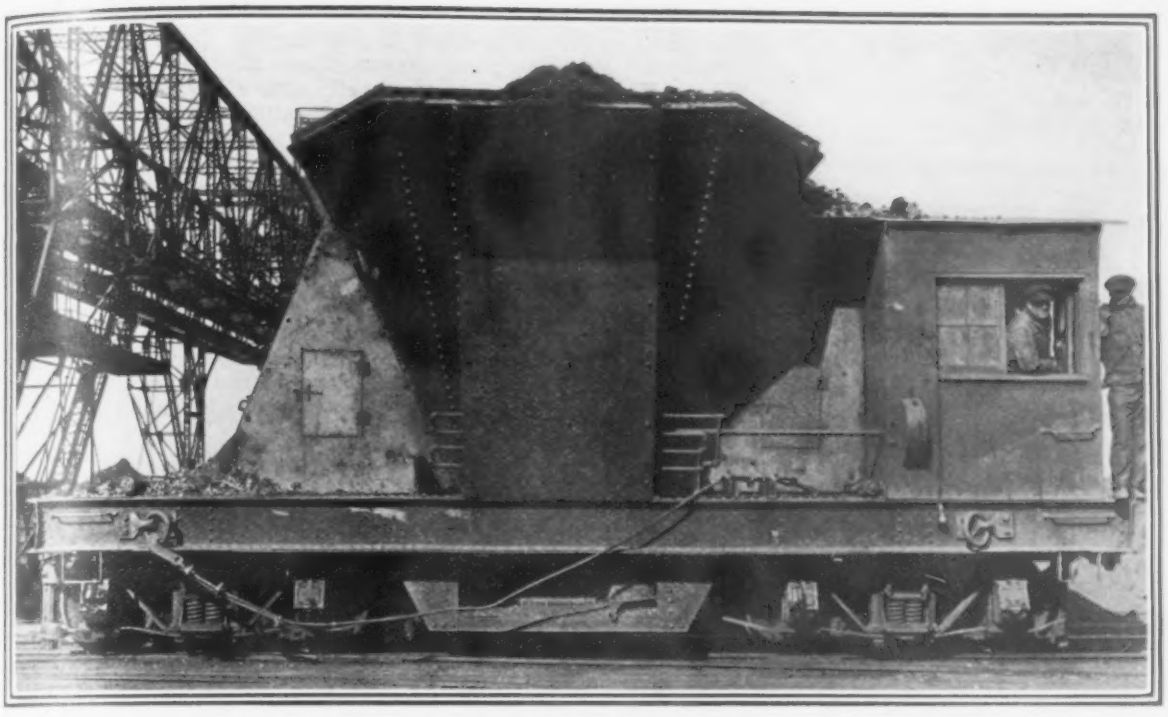
The scale car for handling ore, limestone and scrap from the bin discharge gates to the skip cars is an electrically operated car with an important modification from the standard McKee type in having a center instead of a side platform and is so arranged that material can be loaded from either side, thus serving both rows of bins. The platform of this car is immediately above the hopper and on this platform is mounted the electrical control equipment, scale box, electrically operated brakes and the discharge control mechanism for operating the drop bottom doors of the cars. The operator is inclosed in a cage provided with safety first features, mounted on the top of the car.

Ore is delivered from the storage yard to the bins in a transfer car of 50-ton capacity of the McKee type, electrically propelled and equipped with air-operated double gates so that all material is discharged outside instead of between the rails, and so arranged as to fill the bins to their maximum capacity. The car is also equipped with air brakes.



Special Type of Scale Car with Center Platform Above the Hopper, So Designed That Is Can Be Loaded from the Bins on Either Side

An unusual feature of this car is in the shape of the hopper, the widest dimension being at right angles to the transfer car track; a necessary design because the ore bridge bucket opens at right angles to the track. The hopper is 19 ft. wide and 13 ft. 3 in. long. Owing to the difficulty in handling ore without



The Hopper Transfer Car Is Greater in Width Than in Length Because the Ore Bucket on the Ore Handling Bridge Opens at Right Angles to the Transfer Car Track. An unusual feature fo this car is that it is heated to prevent ore from freeezing

its freezing during the severe winter conditions that prevail in Chicago, the car hopper is equipped with a forced draft car heater of the Peter Smith type supplying warm air through heating ducts surrounding the hopper and gates. At one end of the bins is a turntable 13 ft. in diameter under the scale car track. Two branch tracks run from this, one of which is used for storage space for a spare scale car and the other as a repair track, with a concrete-lined repair pit beneath.

In spite of the difficulties due to low headroom, the congestion at the point of installation, and the necessity for construction work to proceed without interruption to the operation of the other furnaces, a compact and efficient equipment has been provided with large material capacity, easy availability of all of this material as it may be needed, an unusually short haul for the scale car, and a minimum expenditure for labor and upkeep.

Society for Electrical Development Considers Post-War Problems

At the meeting of the Board of Directors of The Society for Electrical Development, held Nov. 12, the possible future activities of the society were given careful consideration; the fact that the war had virtually ended the day before changed the entire aspect and the new conditions had to be considered. In the report of manager's report, it was suggested that the society's activities to educate the public to an appreciation of the advantages of electric service should be continued, and that the society could do a valuable work along the lines of helping the reconstruction of the electrical industry upon a peace basis. It was voted to bring the matter to the attention of the manufacturers in session at Hot Springs, Va., and a committee was appointed to meet with the jobbers at their Cleveland convention in December; another committee was appointed to take up the matter with the contractor-dealers at the next meeting of their executive committee, these society committees to request the manufacturers, jobbers and contractor-dealers to appoint committees to meet with a special committee from the society, consisting of Henry L. Doherty, representing central stations, Gerard Swope, representing jobbers, L. P. Sawyer, representing manufacturers, James R. Strong, representing contractor-dealers, and J. Robert Crouse, representative-at-large, to discuss with this committee the future activities of the Society and the increase of its membership.

The F. L. Schmidt Co., Inc., Eleventh Avenue and Twenty-first Street, New York, manufacturer of machinery, has filed notice of change of name to the F. L. Smith Machine Co.

The World's Locomotive Situation

A New York financial review points out that one year ago the domestic demand for locomotives was enough to take all the country's output. Meanwhile railroad equipment the world over has been deteriorating and only the United States and Great Britain are now in position to take contracts from the rest of the world. The *Evening Post* adds:

"British engine shops during the war were put to work on munitions and ordered to build no more locomotives, which would seem to leave America a free hand outside of Britain and her 'possessions.' Germany is expected to be busy with her own domestic needs. France, always short of locomotives before the war, had five of her six plants in territory ravaged by the Germans. Belgium's eight plants have been dismantled by the Germans. Austria bought most of her locomotives in Germany. Russia's shops have fallen before the enemy and the Bolshevists. Holland, Denmark and Norway bought in foreign markets. Italy manufactures merely enough for her own needs, as Japan does. No engine works of consequence are in the Balkans, and none of modern type in Turkey. Every railroad in South America is short of locomotives. Asia and South Africa are in a like position. It would seem but a question of when the world can begin reconstruction. And that would seem in its turn to hinge somewhat on finance."

The Aluminum Goods Mfg. Co., Manitowoc, Wis., which presented each of its employees a free life insurance policy under the group plan several years ago, is continuing in force the policies of all men who enter the military service and do not leave the confines of the United States.

New Arc Welding Tool

Much of the operator's time is consumed in changing electrodes in arc welding. If the electrode sticks to the work the operator, in releasing the tool, usually draws an arc. If a spring is used, so that the holder requires

A New Electrode Holder for Arc Welding

considerable strength to operate, it is not suitable for girl operators.

The device shown is designed to make the changing of electrodes dependable for production work and permit any amount of pull, in case the electrode froze to the work, at the same time operated easily for release.

The tool is shown ready for use, as well as in detail. The welding current enters at the rear end of the composition shank, passes along the shank to the head of the tool, and from there directly into the electrode. There are no joints in this tool except where the cable is soldered into the shank. Therefore, heating due to contact resistances cannot occur. There is a relatively large contact surface between the electrode and the holding head which precludes heating at this point. The electrode is clamped by a segment operated by a lever. The lever is thrown to the widest open position and the electrode inserted. Then the lever is turned in the opposite direction as far as it will go. Any attempt to pull out the electrode results in tightening the grip of the segment, which is of case-hardened steel.

The trigger is intended for remote control employed with the closed-circuit system manufactured by the Arc Welding Machine Co., Inc., New York. The trigger is omitted whenever this holder is used on other systems.

The new by-product coke oven plant of the Steel Co. of Canada, at Hamilton, Ontario, will soon be in full operation. It consists of 80, 13-ton Wilputte regenerative by-product coke ovens, arranged in two batteries of 40 ovens each. The contract date of completion called for the first battery to be put in operation on Nov. 15, and in spite of all difficulties, due to abnormal conditions, the battery was charged on the date stipulated. The date for the charging of the second battery is Dec. 15, and it is expected that this battery also will be charged on contract time. The installation is complete, including by-product plant, coal and coke handling, boiler plant, etc., and will have a capacity of approximately 500,000 tons of coal per annum. The plant was designed and constructed by the Wilputte Coke Oven Corporation, New York.

The Shepard Electric Crane & Hoist Co. has opened an office in the New Lexington Building, Baltimore, in charge of Norman P. Farrar, who for a number of years has been district manager of the Philadelphia territory.

Safety Starting Device for Punch Presses

The Royal Typewriter Co., Hartford, Conn., uses many punch presses. These have been made safe by the application of a very simple device, one that being capable of ready incorporation with the design of many different lines of machinery may be so employed to very general advantage.

Especially is the device valuable when as at the present day so very many persons are set at work with a minimum of industrial experience in manufacturing plants. Women and young men, unfamiliar with machine operations, are recruited for these purposes in large numbers. Unless due care is exercised, the toll of accidents may be greatly increased. Dependence cannot be placed with confidence upon the person being so cautious in the operation of machinery that there will be immunity from accident. Nothing but complete freedom from fear and danger fulfills the requirements set by the management of the Royal Typewriter Co.'s plant.

Fear as a retarding factor in output has perhaps never received its due debit. For instance, the manager and vice-president of the company, C. B. Cook, says that this is best shown by the result of applying a safety device to the punch presses. He and his associates critically weighed the possibilities and concluded that there would be a drop in production.

This belief was based on the fact that the piece of work, when put in place on the platen of the press, was then left there while the hand that had put it in position was dropped to the second of the two operating levers which must be handled together or the machine is inoperative.

Because of this duplication of effort by the hands it was figured that the "dwell" in getting the machine started would delay the output; in fact this loss of production was carefully estimated as any interference with the manufacturing rate meant very serious consequences. Safety was too obviously essential for even the "let-up" to be allowed to set aside a plain duty and the device was prepared and installed.

The result was a surprising gain in output. The increase can be best explained by reason of the lurking timidity that previously held back full activity in working the presses had given place, with the new device, to complete confidence that now the machines were harmless.

Other devices for the protection of press workers

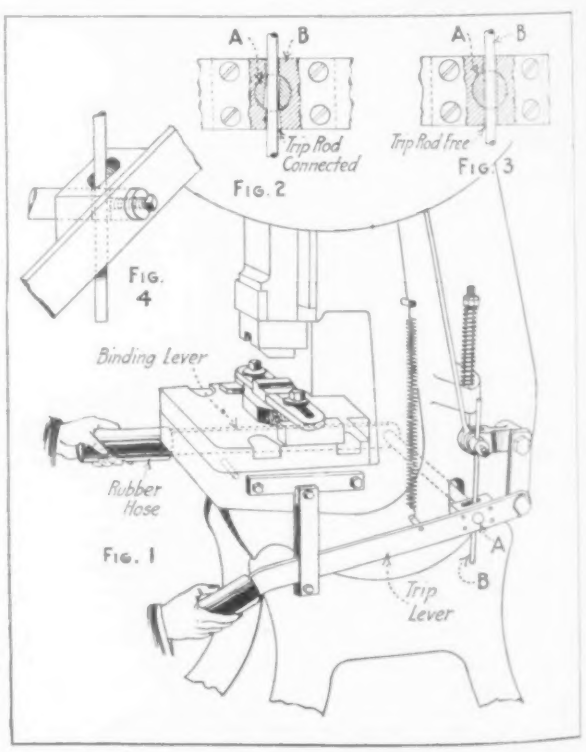


Fig. 1—Royal Safety Device Applied to Punch Press. Fig. 2—Cross Section Showing Binder Shaft Rotated to Grip Tripping Rod. Fig. 3—Similar Section to Fig. 2 but Trip Rod Freed. Fig. 4—A Means of Making Safety Device Inoperative

have been designed. Among these are the "sweepers" to brush back the hands clear of the moving elements about the die and "dish" when the slide and the tool-holder head descend. The idea here illustrated meets certain objections raised in regard to safety devices for this purpose and is donated for use by anyone desiring to apply it.

The safety device applied to a punch press is shown in Fig. 1 at the instant of starting up the machine. Fig. 2 is a cross-section through binding shaft and tripping lever showing the shaft A rotated to engage tightly with the trip rod B. Fig. 3 is a similar section to Fig. 2 but shows the trip rod B released from shaft A. Fig. 4 provides a means of throwing the safety device out of action when the work requires the left hand to continuously handle the stock on the die. For such a purpose the trip rod is gripped by the screw and then the press may be started with the right hand only.

In the illustration of the punch press one end of the binding or locking shaft A grips the trip rod B when the left hand raises the binding lever as in Fig. 1. Then the right-hand lever may be depressed as shown, and this act pulls down the trip rod B, starting the press. Unless the left-hand lever is raised and so continues to be upheld the right-hand lever cannot operate the trip. Obviously if the hands let go either or both levers this release locks the machine in idleness. As the fingers are therefore absolutely safe when grasping the handles to operate the machine so are they as fully protected from injury when the hands let go their hold of the levers and when one or both of them are placing work in the press.

The designing and construction of the plant described in THE IRON AGE, Nov. 21, 1918, under the title, "Modern Coreroom for Malleable Foundry," was the work of the H. M. Lane Co., Detroit, Mich. This credit was not given in the original article.

A Universal Tester

The testing device shown has a slotted bed, carefully scraped and serviceable as a layout table. The various wearing parts of the fixtures are of hardened and ground tool steel. A swivel bracket or plate at the end of the bed can be locked vertically, at right angles to the supporting surface, or swing down or up to any position desired for testing any tapers on plain turned work, or on all angles, rims, hubs and holes of bevel gears, cutters, etc. A dial indicator mounted on an adjustable stand, a center and tail stock, and a second support for carrying additional bearings for cylindrical work, are also shown in the illustration.

Cams, sprockets, worms and jigs may be tested with the same facility as gears and racks. A drawer is provided for holding the spare testing equipment. Three sizes of the machines are manufactured by Charles Eisler, Bloomfield, N. J.

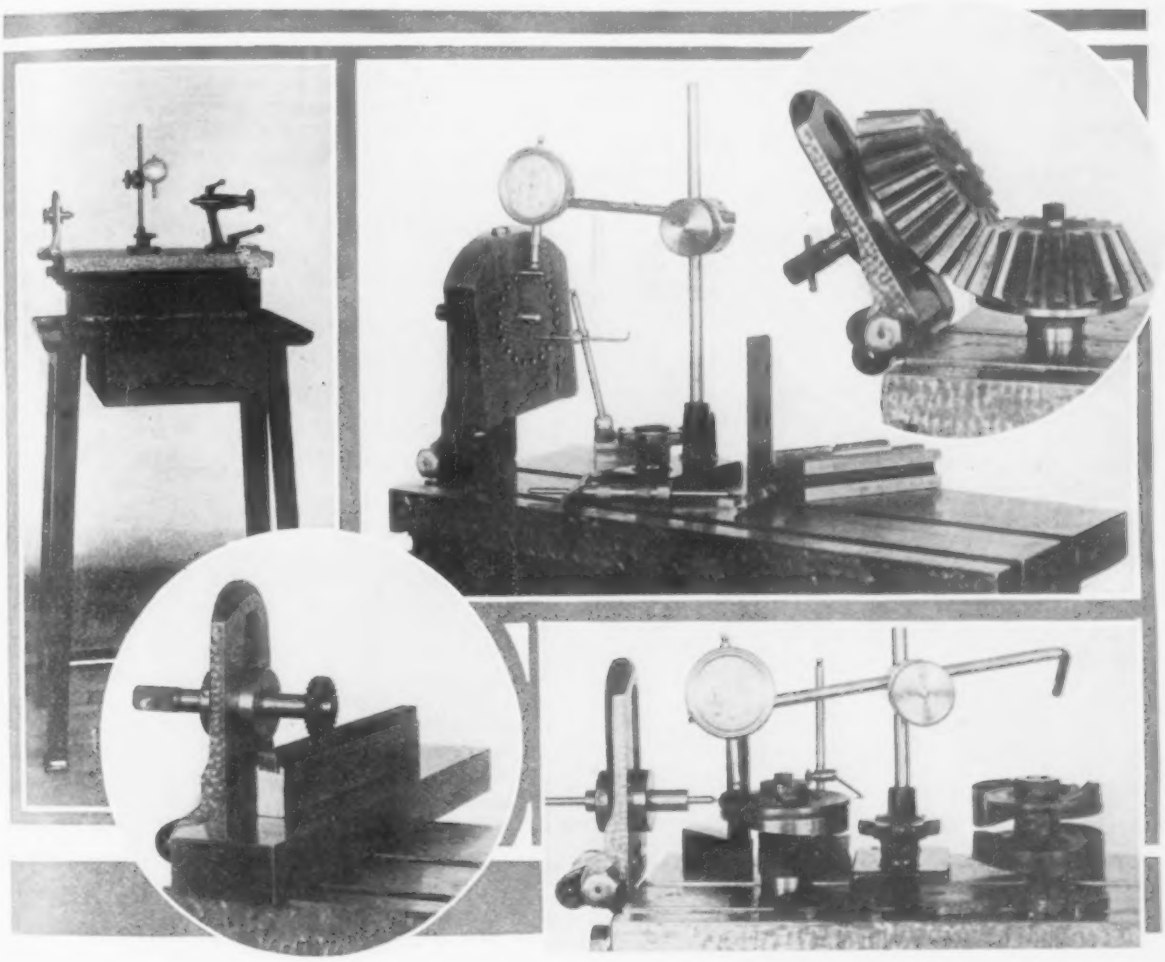


Fig. 1—The "Testall" Ready for Centered Work

Fig. 2—Test of Rack and Pinion

Fig. 3—Test of Jigs

Fig. 4—Testing Cams

Fig. 5—Testing Gears Without Disturbance of Center Distances

The Buffalo Forge Co., Buffalo, recently had a house-warming at its new plant which was greatly enjoyed by about 1600 guests. The new plant of the company, which is of the saw tooth roof type of construction, has a number of large galleries which will be used in the near future for a machine shop. These galleries are supported on heavy steel beams and have wooden floors with a hard wood covering which afforded a very delightful dance floor. All from the general manager down to the sweepers participated in the festivities. The company has some rather extensive plans for social betterment work.

The Goodrich Rubber Co., Akron, Ohio, announces that on Dec. 1 it will pay bonuses amounting to approximately $2,000,000 to its salaried employees, over 5000 in number. Each salaried employee will be awarded a bonus of 25 per cent of his entire salary in 1918.

WAR AND PEACE STEEL NEEDS

Present and Future Conditions—War Problems —France as a Competitor

For the first time in the history of the local sections of the four large engineering societies with headquarters in New York City, a joint meeting was held Wednesday evening, Nov. 20, in the auditorium of the Engineering Societies Building, New York. Representatives of the American Society of Mechanical Engineers, the American Society of Civil Engineers, the American Institute of Mining Engineers, and the American Institute of Electrical Engineers filled the auditorium. The meeting was arranged some time ago by the officers of the mechanical and civil engineers. The general subject was "The Demand for Steel and the Conservation of Steel." J. E. Johnson, Jr., consulting engineer, New York, presided. J. Leonard Replogle, Director of Steel Supply of the War Industries Board, Washington, had been announced as the principal speaker, but because he had been unavoidably detained in Washington, Albert C. Ritchie, counsel of the board and attorney general of Maryland, was delegated to represent him.

The speaker introduced his remarks by saying that when the history of the war behind the lines is written, especially as regards the production of various war essentials and the work which men did to supply the army, there will be no brighter page than that devoted to the work of Mr. Replogle. When the latter took charge of the matter of supplying steel for the Allies in September and October, 1917, of the country's total production comparatively little was being made for war purposes. The war program was not known definitely and he found that chaotic condition existed as to what must be done to meet the country's program. After a thorough study of the situation it was found that the work of the War Industries Board would have to be divided into three general functions: Allocations, priorities and price fixing. The speaker stated that one of the most interesting meetings of the Board, held last August when the allied armies were pursuing their advance, had to do with whether the steel available should be allotted to Pershing, McAdoo or Schwab.

Limiting Construction Work

One of the most far-reaching orders of the board had to do with construction work. It was found necessary to halt all such work which was not for war purposes unless otherwise permitted. This was because of a shortage of steel and not because of a lack of other building materials. It was found that 25 per cent of the railroad tonnage used in ordinary times was devoted to carrying building materials solely. The speaker cited as typical certain data with which the War Industries Board was confronted; namely, that in the first half of 1918 the total output of finished steel in the country was about 17,000,000 tons, whereas the estimated requirements for war purposes in the latter half of 1918 were 21,000,000 tons. To make up this deficiency of 4,000,000 tons was the problem of Mr. Replogle. That it was solved to the satisfaction and gratification of the entire nation was due, said Mr. Ritchie, to the co-operation of the steel men of the steel industry. So thoroughly had the situation been analyzed that in the office of the Steel Director there were daily reports from all mills from which charts were made, showing the exact situation from day to day. The difficulties were numerous, but the steel men never fell down.

The price fixing program Mr. Ritchie characterized as remarkable. He said that only in the last day or two it had been stated that because of the fixing of maximum prices the amount of money saved to the country and to the Allies in the steel purchased for war purposes had been about $3,000,000,000.

Present and Future Conditions

Mr. Ritchie wished he could be more specific as to what is going to be done and as to the future policies of the Government. It should be realized, he said, that only 10 days have elapsed since the armistice was signed, and that the single thought of the entire nation had been to win the war. In order to solve the new problems more study was necessary than had been possible in this brief period. In England, however, as early as in 1916 this question had been given considerable attention by government authorities. The present situation he characterized as absolutely the reverse of what it was when the country went to war. Then about 45,000,000 tons of steel ingots was needed for war and essential purposes and everything had been done to obtain this. And now, almost over night, a complete change has taken place. Many contracts have been canceled and steel men are confronted with the absence of a peace market and with large quantities of raw material on hand. Mr. Ritchie expressed his belief, however, that the situation will take care of itself.

Further Government Control

Representatives of the steel industry in Washington last week had expressed a desire for some control for some time to come. As to this, the War Industries Board had virtually come to the decision that all curtailments of business in general should be released, but in the case of any single industry, when that industry expressed a desire the board was willing to co-operate and continue control for a time. Mr. Ritchie closed with the opinion that there was to be a wonderful market for the rehabilitation of Europe and that in this country the demands from public service companies, railroads and other directions would be very large.

The Situation in France

J. E. Johnson, the chairman, in calling on the next speaker stated that there was a general feeling that there would be a slump in steel demand for a time at least, and therefore that at a meeting of this character a statement of the situation in France and Belgium would be both interesting and valuable. For this purpose Capt. P. E. Dulieux of the French High Commission had been delegated to outline the situation.

Captain Dulieux said that the commission had been endeavoring to obtain by cable some definite information from France as to the probable needs, but owing to the congested condition of communication not much success had resulted. It was certain that all steel plants near the front lines of battle had been destroyed, and that all the steel plants near the borders of France and Belgium would have to be rebuilt. France in 1913 produced about 5,000,000 tons of pig iron, of which about 3,500,000 tons came from the eastern section and made from the ores of that district. Of the remainder, 1,500,000 tons, 30 per cent was produced from ores from Spain, Algiers and other sections. The Germans have destroyed about 80 per cent of the country's pig-iron capacity. As to the needs of the immediate future, large quantities of steel will be wanted for railroads, bridges and other purposes. The captain thought that in addition to the total pre-war consumption of steel in France there would be needed about 6,000,000 tons. Ultimately France will become one of the largest steel producers in Europe, and with Luxemburg and Lorraine, Belgium and France together may produce more steel than England. That France will eventually be a competitor of the United States was quite evident.

The meeting closed with an address by Julius Kahn, consulting engineer, Youngstown, Ohio, on the larger uses of reinforced concrete in building operations in the immediate future.

The Philadelphia Roll & Machine Co., Philadelphia, expects to have in operation by Dec. 15 a new 25-ton acid open-hearth furnace. In connection with this installation the company has built a large pit annealing oven and a large core drying oven and is equipping the open-hearth building particularly for the manufacture of steel and steel alloy rolls.

The Stamford Steel Products Co., Milford, Conn., has just completed two new trains of rolls which will be in operation Dec. 1.

The Manufacture of Semi-Steel Shells

Practice as Recommended by Ordnance Department — Chemical, Metallurgical, Molding and Machining Details

The following account of the operations for making semi-steel shell has been prepared by the Ordnance Department as a guide for manufacturers. It describes methods which have been effective in producing satisfactory shell, but is in no way intended to necessarily restrict foundrymen to the use of such methods, nor to relieve them from the responsibility for obtaining shell which meet the various requirements of the specifications.

Chemical Requirements

Cupola-made semi-steel has been used for years in the United States and abroad in castings for a multitude of mechanical purposes, with varying steel content according to the purpose intended. The very extraordinary hazards and requirements attendant upon the use of semi-steel for making projectiles compels a rigid, inflexible specification for the tensile, impact and hardness tests which is attained by having quick, constant access to a reliable laboratory, experienced in analyzing foundry and furnace metals and materials.

Semi-steel shell, cupola mixture, for green sand molds consists of remelt semi-steel, 25 to 40 per cent; steel, 25 to 35 per cent; pig iron, 30 to 40 per cent, the latter including ferrosilicon and ferromanganese when used.

A cupola lined to 66 in., having a metal output around 13 tons per hr. with 14 to 16 oz. air, is producing satisfactory 155-mm. semi-steel shell running a charge of 2000 lb., proportioned as follows:

	Lb.	Silicon	Phosphorus	Manganese	Sulphur
Basic pig, No. 3....	300	1.82	0.670	0.56	...
Wayne pig, No. 3..	320	2.01	0.560	0.82	...
Steel (shell butts)...	620	0.10	0.042	0.78	...
Return (semi-steel) .	700	1.31	0.290	0.76	...
Ferrosilicon	50	12.00	0.070	0.00	...
Ferromanganese	6	...	...	80.00	...
Laboratory analysis*. ...		1.19	0.300	0.73	0.117
Corrected analysis... ...		1.39	0.310	0.98	...
Total	2006	...	...	...	...

*Combined carbon, 0.74 per cent.
Graphite carbon, 2.40 per cent.
Total carbon, 3.14 per cent.

The foregoing example of elements of cupola metals will also serve as a guide for a mixture when using a reverberatory melting furnace.

The range of the analyses of the metal in the castings made from the above mixture follows:

	Per Cent
Silicon	1.10 to 1.30
Phosphorus up to.....	0.35
Manganese up to.....	1.00
Sulphur	0.08 to 0.12
Combined carbon	0.60 to 0.70
Graphitic carbon	2.40 to 2.60
Total carbon	3.10 to 3.20
Silicon plus total carbon.....	4.40

For (green) sand molding semi-steel must be very fluid, extremely hot and not in the least dull, because it must liberate its gases. On account of the lower carbon content semi-steel has a tendency to become sluggish when dull, so it must be handled rapidly and at a high temperature.

The Cupola, the Charges and the Melting

In order to attain this the cupola must be attended more carefully than with gray iron, a larger percentage of coke must be used, and the cupola charging practice followed closely. A cupola accustomed to producing hot gray iron need not be altered in any way. It is important that the charges be as small as is consistent with keeping a definite layer of coke between the charges. The steel mixes with the iron better when this practice is followed. The charges must be placed level and uniform throughout—charging the steel after the flux directly upon the coke and following with the pig iron and the remelt. When large charges are used, the quantity of steel, pig and remelt being greater, they do not mix as completely as do smaller charges.

It is advisable to flux the cupola continuously, using generous quantities of flux. For a 2000-lb. metal charge in a cupola lined to 66 in., 250 lb. of limestone evenly distributed on top of the coke works out satisfactorily.

The first metal from the cupola is not suitable for pouring shell—it is usually weak and does not stand the tensile nor the impact tests. It should be poured into other work or pigged and the pouring ladle drained before beginning to pour shell. Use scrap steel in small pieces in the first charge as it melts more easily. The iron will always melt first. Maintaining a layer of slag in the cupola helps to desulphurize the drops of molten metal while straining through it.

It is essential to use a large mixing ladle, as this insures a much more uniform semi-steel mixture. A bottom pouring mixing ladle of the teapot type is greatly to be preferred as it pours clean metal. Large pouring ladles are also preferable, as the metal holds its temperature better when handled in volume. A reverberatory melting furnace instead of a cupola can be employed, provided it insures the production of a homogeneous melted mixture.

Metal-Working Core-Forming Boxes

The accuracy of contour, dimensions and location required of the shell interiors compel the use of a method for making metal-working core-forming boxes that will invariably produce these requisites. A method in satisfactory use follows:

Wood patterns are made for producing the metal master core box pattern which is cast in several pieces, Fig. 15, each piece having sufficient additional stock for machining. The pieces are planed, bored, Fig. 2, and assembled, forming a two-piece master core box pattern. One piece, the inside half of the pattern, is then permanently attached to one side of a trued wood match plate; the other piece, the outside half, is attached to the other side, Figs. 3 and 4. These two views also show the two halves of a finished mold for pouring a working core box.

Working Core Box and Core Arbors

The working core box is cast with sufficient stock to enable facing the two halves and the nose end, Fig. 5, and boring the anchor hole which takes the core arbor shank. The recess in which the core is formed is not machined but is scoured sufficiently to remove roughness or slight projections, Fig. 6. On one-half of the working core box are cast trunnions to enable swinging it in a wooden frame or yoke when hand ramming a core. To the same half of the core box are hinged four swinging clamps with which to clamp it to the other half of the box.

Fig. 7 shows a type of semi-steel shell core arbor in use. It consists of a piece of pipe, one end of which is drawn to a blunt open end, the nose of which is about one-third of its regular diameter. Near the other end is shrunk a collar. This end is then turned and ground to a close sliding fit in the drilled and reamed anchoring hole, in the working core box (and in the flask). The collar is also faced on the under side. This face constitutes the "stop" when the shank end of the core arbor is inserted into the anchor holes of the core box and the flask. The upper face supports the end of the core. The machined shank end of the arbor is threaded to take a nut, which is used to draw the arbor to "position" in the core box and flask anchor holes. "Position"

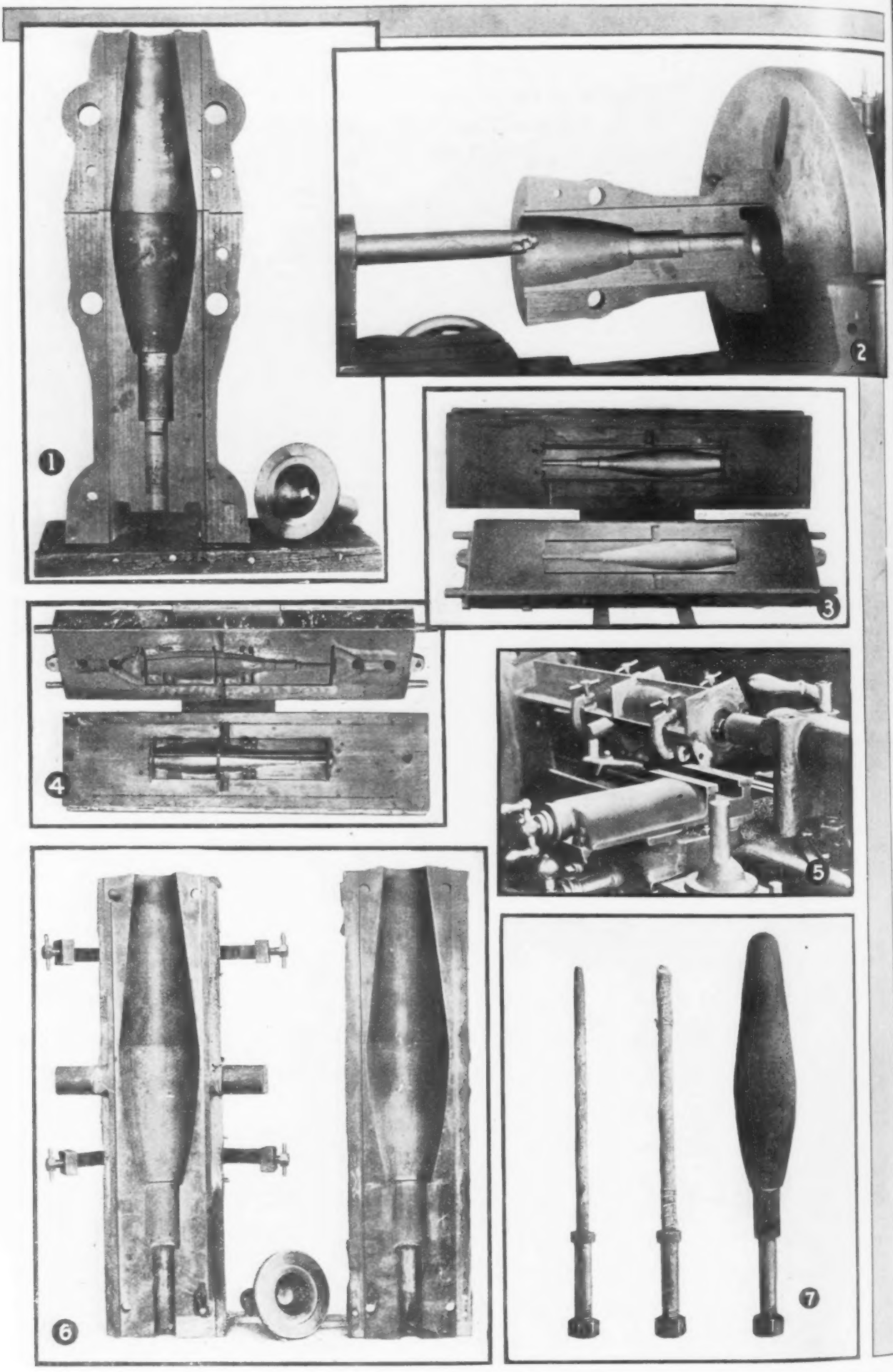
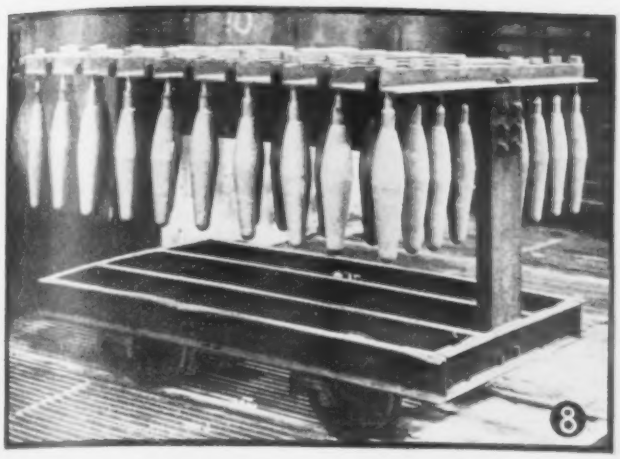
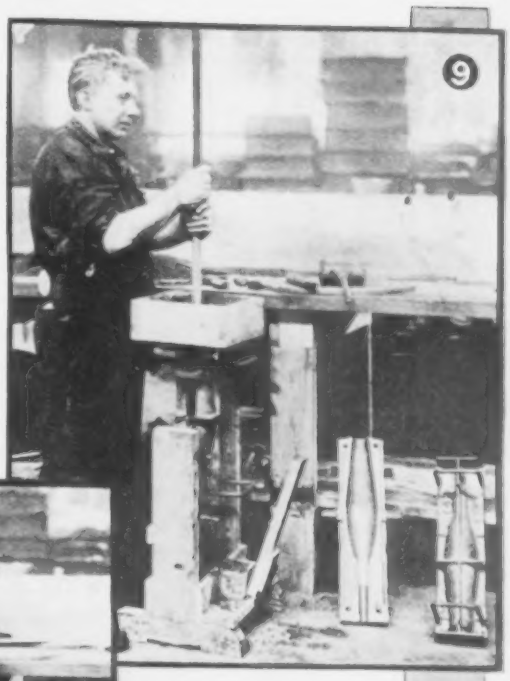
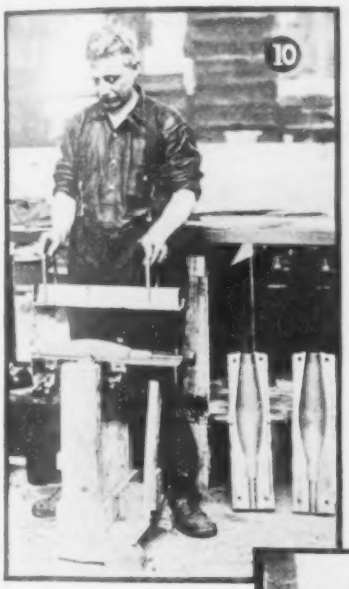
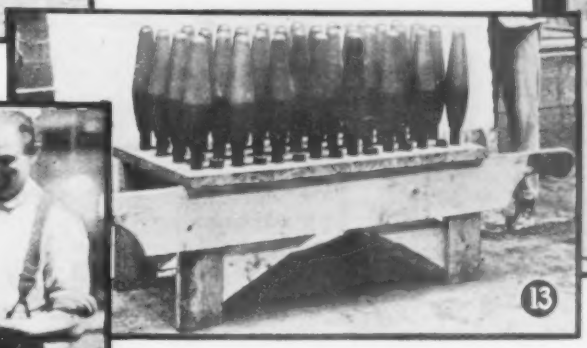


Fig. 1—Iron Working Patterns for Core Box Showing Joint Which Allows for Machining. Fig. 2—Turning Inside of Pattern for Core Box with the Use of Ironing Attachment. One half of box removed. Fig. 3—Pattern for Inside Half of Core Box and Finished Half of Mold. Fig. 4—Pattern for Outside Half of Core Box and Finished Half of Mold. Fig. 5—Turning End of Working Core Box to Take Loose Piece Which Forms Round Nose on Core. Fig. 6—Core Box of Two Halves and Loose Piece to Form Round Nose on Core. Fig. 7—Core Arbor Plain, Core Arbor Wrapped with Burlap and Finished Core Ready for the Foundry









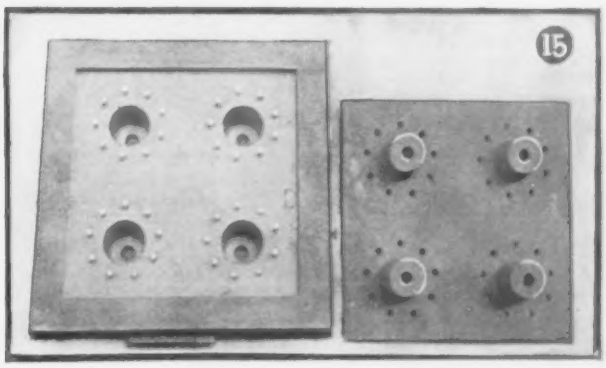


Fig. 8—Truck With Cores Hanging Instead of Standing Up. Trucks are being fitted up so that all cores can be dried standing on end. Fig. 9—Ramming Up Core Box. Two halves of core box standing in front of bench. Fig. 10—Core Box in Horizontal Position. Drawing half of core box. Fig. 11—Core Box Turned Over and Core Being Removed from Box. Rapping lightly with stick while core is being drawn. Fig. 12—One Half of Core Box and Core Removed. Fig. 13—Rack for carrying Cores from Core Room to the Foundry. Fig. 14—Lowering Core Into Mold. The molds at left of picture are completed. Fig. 15—Box Used for Making Core for Cope End Dry Sand Core. This core acts as a strainer while pouring

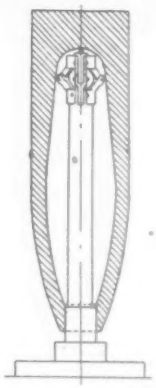


Fig. 16—Center Base. Vertical Drill Press. Vertical Expanding Mandrel. Time, 2 Minutes. Note—Base and Nose of Shell Roughly Trimmed and Shell Cleaned in Foundry

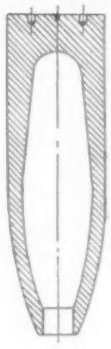


Fig. 17—Drill Driving Holes in Base. Vertical Drill Press Jig with Center Stud to Locate Holes. Time, 3 Minutes

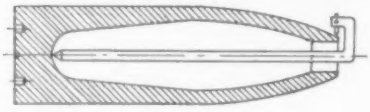


Fig. 18—Gage and Mark Nose Relative to Inside Bottom, Plus 1/16 In. to Finish. Hand Operation. Special Marking Gage. Time, 1 Minute

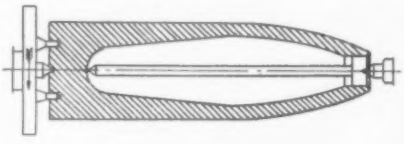


Fig. 19—Cut Off Nose End to Mark, Allowing 1/16 In. to Finish, Bevel Inside Edge 1/32 In. for Center. Engine Lathe. Mandrel in Nose with Fixed Center. Time, 2 Minutes

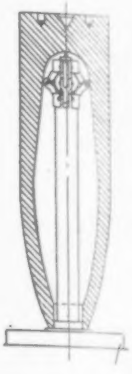


Fig. 20—Recenter to Exact Depth Relative to Inside Bottom. Vertical Drill Press, Expanding Mandrel and Face Plate, Automatic Drill Stop. Time, 1 Minute

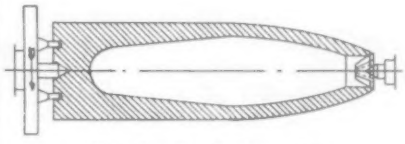


Fig. 21—Rough Turn Body and Profile. Lo-swing Lathe, 24 In., or Engine Lathe with Profile Attachment. Plug Center. Time, 10 Minutes.

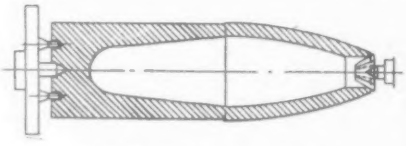


Fig. 22—Finish Turn Body and Profile. Lo-swing Lathe, 20 In., with Profile Attachments. Plug Center. Time, 10 Minutes

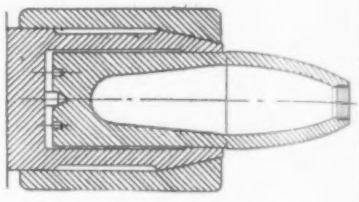


Fig. 23—Bore Nose, Face and Thread to Exact Length Relative to Inside Bottom Stop on Base Center. Turret Lathe, 24 In., with Hex. Turret, Hollow Spindle for Collet Chuck. Time, 10 Minutes

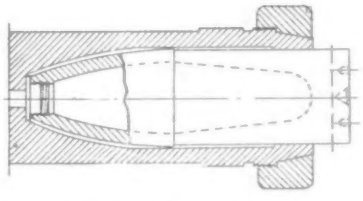


Fig. 24—Nose Centering Plug, Cutoff Base. Cutoff Machine, Collet Chuck, Double Tool Post. Time, 5 Minutes

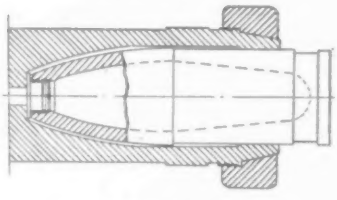


Fig. 25—Band Groove and Undercut Collet Chuck with Nose Stop. Time, 4 Minutes. Note—If Lo-swing Lathe Is Used on 19 and 20 this Operation Can Be Done Simultaneously

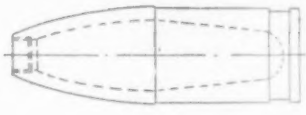


Fig. 26—Weigh and Mark. Automatic Scale and Special Marking Gage. Time, 1 Minute

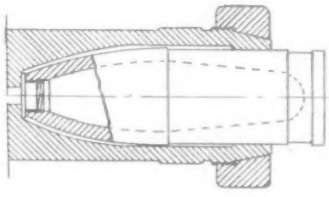


Fig. 27—Finish Base and Chamfer. Facing Machine. Time, 4 Minutes. Note—Groove Base for High Explosive Shell

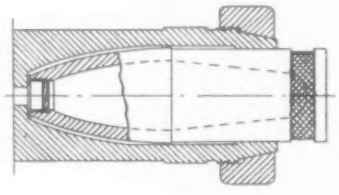


Fig. 28—Knurl Band Groove. Knurling Machine. Time, 2 Minutes

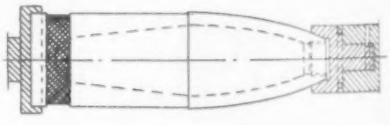


Fig. 29—Grind Bourrelet. Plain Cylindrical Grinder; Special Head and Tail Stock Fixture Operated by Foot Lever. Time, 2 Minutes. Note—Air Test

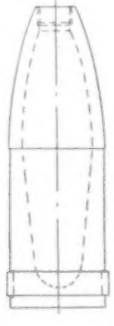


Fig. 30—Copper Band Applied. Banding Press. Time, 1 Minute

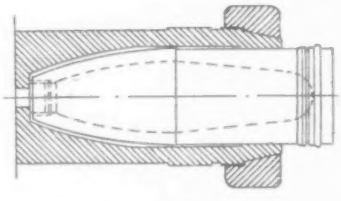


Fig. 31 — Copper Band Turned. Band Turning Lathe with Collet Chuck. Time, 2 Minutes. Note—Hydraulic Test and Dry After Band Is Applied. High Explosive Shell Apply Base Cover After Test and Drying.

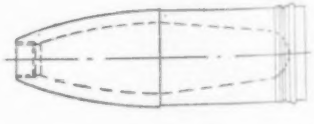


Fig. 32—Paint Shell. For High Explosive Shell Only. Varnish Inside. Time, 2 Minutes

Figs. 16 to 32—The Various Progressive Steps in Machining Operations on Semi-steel Shells, Entailing Minimum Handling

constitute *contact* of face of collar with face of anchor holes.

The nut on the core arbor also enables hanging the cores vertically on core trucks, Fig. 8. The portion of the arbor enveloped by the core contains a number of holes, approximately ¼ in., over which is spirally wrapped a thickness of scrap burlap to prevent the holes from becoming plugged with sand. This burlap carbonizes upon pouring and insures easy withdrawal of arbor from the casting.

Core Sand and Bonding Mixture

The following sand mixture produces a tough, porous, smooth semi-steel shell core which vents well and stands handling: Selected fire sand or pure silica sand; ground fire clay; No. 1 new molding sand; sawdust; molasses; water. A typical batch comprises the following proportions:

One box 12 in. x 12 in. x 10 in. fire sand.
One box 12 in. x 12 in. x 3½ in. ground fire clay.
One box 12 in. x 12 in. x 3 in. No. 1 molding sand
One box 12 in. x 12 in. x 1½ in. sawdust.
One cup molasses.
Two quarts water.

All should be very thoroughly and uniformly mixed in a rotating sand mixing machine.

Hand-Rammed Cores

Insert core arbor into the anchor hole of the half core box which is suspended horizontally, by trunnions cast thereon, in a yoke frame. Situate the other half of core box. Turn nut on shank until arbor is drawn to "position." Clamp the halves together securely. Turn core box to a vertical position. Feed in a small quantity of sand. Ram this neck part of the core very hard, using a piece of bar iron ½ x ¼ in., or a similar piece of hard wood. Feed more sand, meanwhile ramming until full, Fig. 9. Run a vent wire down through core, parallel with arbor, three times uniformly spaced. Be careful not to allow vent wire to come in contact with the sides or neck of the box. The holes left by the vent wire are closed in at the top and tacked down with fingers and three eightpenny nails inserted. A separate round iron end shape is then secured to the upper end of the core box through a hole in which a small additional quantity of sand is rammed with a small rammer fashioned for the purpose or with the fingers. A small round iron plug-shaped piece is then pressed into the hole to ram into shape the extreme tip of the core.

Withdraw this plug and with it lightly rap the iron end shape piece, drawing the same away from the box. Turn the core box to a horizontal position, unclamp, rap and draw upper half of the box, Fig. 10. Turn core box to a vertical position. Unscrew arbor nut about one turn. Grip nut firmly with one hand, turn core box slightly beyond vertical and lightly rap core box and the core will swing clear of the box, Figs. 11 and 12. Still gripping the nut, gently hang the core, suspended by the nut, in the rack on the core truck, Fig. 8.

Bake three hours (for a 155-mm. shell core) in a temperature of approximately 450 deg. Fahr. When cool, dip in a wash comprising three parts triple X mineral facing and one part best plumbago, stirred into a regular clay wash, using Jersey clay and water. Thoroughly agitate during dipping. Shortly thereafter, again dip the butt end (the end opposite the threaded end) for about 4 in. The core is then again hung on the same core truck and placed in the oven at the same temperature and baked for another hour. After a second drying the cores are taken from the truck and the nuts removed. The cores are stacked on a carrying rack, shank end downward, through holes provided in the deck of the rack, Fig. 13, and carried to the foundry floors.

Molding Semi-Steel Shell

The use of one-shell flasks or multiple-shell flasks is principally a question of foundry equipment. The one shell or one piece flask is placed on a jarring machine. A metal shell pattern, having a shank on its nose end of exactly the same size and close fit as the shank on the core arbor, is placed in the flask, the end of the same taking a nut the same size as used on the core arbor, which is set up hard by hand. Sand is then fed into the flask and rammed. A number of holes are then made with a vent wire in the mold parallel with the sides of the pattern to facilitate the venting. Remove nut from shank of pattern, draw pattern from mold and very thoroughly veneer the mold with plumbago by shaking in a quantity and then inserting a blow pipe for the purpose of spreading the same. This is to minimize cleaning labor. Lower core in mold by hand, Fig. 14, machined end of arbor entering anchor hole. Screw nut home on lower end of arbor to securely hold core in absolutely central position during the pouring of the metal.

A cast-iron pouring box is now placed on top of the flask and made fast with two clamps and clay or molding sand placed around the joint to prevent run-outs while pouring. In this pouring box, Fig. 15, is placed a slab of baked core sand for a strainer gate. It is perforated with a number of small holes (the 155 mm. has eight ⅜-in. holes) accurately located to cause the metal to feed into the mold in a number of small streams without dropping against either the side of the core or the mold, and striking the mold near the nose of the shell. The baked core sand strainer also insures feeding clean metal to the casting. It also includes a vent stack riser enabling the gas to flow freely from the mold.

The space between, about 1½ in., this baked core sand and the sides of the pouring box is filled and rammed with molding sand. As soon as the core has stopped venting after the pouring, remove the nut from the core arbor and allow the casting to remain in the flask at least four hours before shaking out. In shaking out care must be taken to draw the casting straight to prevent injury to the core arbor shank.

Cleaning the Shell Casting

Among the many ways to clean the shell inside and outside, sand blasting is recommended, as it is rapid and effective and minimizes handling. Sand blasting apparatus provided with special jets is available for this purpose.

The next step is the cutting off of the riser and rough trimming the nose, best done with a cutting-off machine, leaving ample metal for the machining operations. The illustrations, Figs. 16 to 32, show a consistent progression of machining operations entailing minimum handling.

Steel Bars for France

YOUNGSTOWN, OHIO, Nov. 25—Order for 3500 tons of soft Bessemer steel bars has been placed with a leading valley producer. The material is to be inspected as to finish, size and quantity and shipment is to be made as soon as government demands become less pressing. The contract was placed by the French Government, giving rise to the hope that France will be in the market for American steel in substantial tonnages.

One maker still has an order on his books for 100,000 tons of shell steel for the British Government and while the contract contains a substitution clause for delivery of an equivalent tonnage of other steel products, the original order is still being filled.

Manganese Steel Castings Plant in Virginia

The Manganese Steel Casting Co. has let a contract to the General Contract Co., Norfolk, Va., to build a plant at Newton, Va. The buildings, which will be fireproof, will cost about $300,000. It is stated that there will be four 10-ton electric furnaces, which will occupy a building 120 x 60 ft. The daily output will be 40 tons of manganese steel castings for steam and electric railroads, cars and tires for car wheels. Construction is to begin Feb. 1, and it is proposed to complete the work by next June. New York and Pittsburgh capitalists are said to be interested in the enterprise. It is reported that 30 cottages will also be built for the use of employees.

Important Phases of the Labor Problem*

Problems of Pensions and Insurance—Profit-Sharing in Industry—Adjustment of Labor Disputes—Working Conditions—Hours of Work

BY MAGNUS W. ALEXANDER†

A number of concerns in trying to overcome that condition, have said, "Any one in our employ who has served us faithfully for three years—and the test is that the worker has been continually employed and is still employed—shall be entitled to a vacation with full pay. We will give him, after three years' service, three days, after four years' service four days, after five years' service five days, and so up to a limit of ten days or even two weeks." The artificial barrier now existing between the office and the shop is being thrown down in this way; the arrangement is being appreciated by the rank and file, and it costs a comparatively small sum to the employer. The figures of a number of concerns make it clear how little it costs to give the vacation privilege. It makes a man in the shop feel that he is, after all, a part of the big family de facto, and not merely theoretically, as he feels now.

I am not going to take the time to explain pensions as a form of supplemental wages, except to say that a pension may have relation to the age of the employee, a man being pensioned at sixty-five or seventy, or to his service, he being pensioned after twenty or twenty-five years of continuous service, or to both. Many schemes are in vogue and others will be worked out in the next few years, but most of them are not on the right basis.

Objections to One Form of Pensions

Take a vigorous young mechanic—and that is the type of man you want—twenty-five or thirty years old, and ask him to stick to you and to his job because in twenty or twenty-five years from now he is going to get something. Can you blame him for feeling that that proposition is not very attractive to him? He has no compelling interest in the matter; he does not even know for certain whether you are going to give a pension to him at that time; he does not know whether you are not going to discharge him just prior to that time in order to save the pension. So I believe that whenever a pension system is worked out it ought to be worked out on the contributory basis, whereby the employees, as well as the employer, chip in together into one fund out of which the employee can always withdraw his portion at a fair interest rate whenever he chooses to leave the employment, and out of which he may draw not only his own share but also a part of the employer's share at a fair interest, if he chooses to draw out, after, let us say, 10 years of service, and out of which he shall get a substantial pension when he has fulfilled the conditions of the pension system and remained in the employment for a certain period, twenty or twenty-five years, and reached a certain age. You may answer that by such a method you make it rather easy and even attractive to the employee to leave the employment and get back certain accumulated moneys; you may say that you want to bind him to yourself in some way. While I submit that you are right in your desire to bind him to yourself and to your employment, you are wrong in your method; the less you bind him, the more you bind him, and the more you bind him, the less you bind him. I think that is the experience of all those who have tried it.

Similarly, I shall not say here much about insurance, either in the form of life insurance, accident insurance, sickness insurance or unemployment insurance. Again, various systems are being worked out particularly relating to accident and sickness insurance. I refer to accident insurance outside the employment, because accidents occurring inside a plant are already being taken care of by workmen's compensation laws. In respect to sickness, mutual benefit associations administered by the employees have already done some very fine work. I would strongly recommend that every employer, no matter how small the number of his employees, should institute some such scheme and make it the basis of representation of his employees in dealing with them on questions of general interest to both. This has an important bearing when you think of the efforts being made now to compel employers to introduce collective bargaining schemes for the purpose of giving the mass of employees of an employer a collective voice, a representative voice.

Problems of Pensions and Insurance

In both cases, in pensions and insurance, the Government is endeavoring more and more to invade the field of private initiative. To this day we have no general old age pension system in any State in this Union, although efforts have been made for its establishment for many years, the first effort having been made in Massachusetts in 1908, when I had the honor of being appointed chairman of the State commission to study this problem. In recent years governmental interference in respect to sickness insurance or health insurance, as it is more often called, has become a more immediate and pressing problem. In the State of New York, in Massachusetts, and in California particularly, laws have been introduced to enact such insurance, and in many other States, at the present time in nine States, commissions are at work to study the problem. I am sure all of these commissions, by the nature of their make-up, will recommend to the incoming legislatures that health insurance be enacted. It is an appealing call to take care of those who are sick and cannot take care of themselves, to take care of them in an organized way, to take care of them in a humane way, to let the employer as well as the employee contribute to a fund out of which the benefits should come. Every one will readily subscribe to the correctness of the premise but not to the correctness of the proposed method of carrying it out, if he will look behind the scene and study the problem in all its bearings, going right back to the only experience on a large scale that we have, over in Europe, where in Germany for twenty-nine years and in Austria for twenty-five years, and in other European countries, in England for about six years, health insurance laws have been in effect. As you study the results you will become less enthusiastic as to the method suggested.

But even if you study the problem from your own standpoint, without regard to European conditions, and reason out logically what you are trying to arrive at and how it is best to arrive at that goal, you will object to the heretofore proposed legislation as the State of California did on Nov. 5.

To take care of the sick who cannot take care of themselves, and take care of them in a humane way, by organized effort, is absolutely necessary and an indisputable need, but first we ought to know what the problem of sickness is, what is its nature, what is its extent, what causes it, to what remedies will it yield. When we have found out and have begun to remove the causes, when we have applied ourselves to the study of preventive work, and by such preventive work have eliminated the greatest amount of that sickness, then let us take the residuum of unpreventable and unprevented sickness,

*Second and concluding part of an address delivered to the annual convention of the National Founders' Association at Hotel Astor, New York, Thursday, Nov. 14. The first part of this address was printed in THE IRON AGE of Nov. 14.

†Consulting Engineer General Electric Co. and Managing Director of National Industrial Conference Board.

and deal with it in a most liberal fashion, more liberal even than the advocates of health insurance now propose. But let us take one step after the other, is logical sequence. You will save money, you will increase human happiness, you will save lives by that means; and in the other case, you will simply pay people who are sick without regard to how their sickness was caused or how it might have been prevented, and will bring in its train a number of social evils such as malingering, which is so prevalent now under workmen's compensation laws and has been so prevalent in European countries where health insurance has been tried.

Profit Sharing in Industry

The most important phase of supplemental wages is so-called profit sharing. Again, profit sharing, whatever its type, can be reduced to a simple basis and a simple form. The basis is that either the profits of the concern are, in part, to be distributed among the workers as well as the managers, or that the workers should have an extra compensation based on the amount of production of the concern. The form is that that share shall be paid in cash, by stock or by partnership certificates. I submit, as far as the management is concerned, a profit sharing plan should be based on the profits of the concern, because the management is responsible for the profits. As far as the working body is concerned, it would be a mistake to base their participation on the profits of the concern, because the working body has only a very indirect influence on the profits of the concern. Buying and selling, the whole problem of management, these things determine the profits as much and even more than the work itself. But the worker has a direct influence on the production turned out by him and by his fellow workers, and his participation in some form or another in the amount of production, in the form of extra compensation, may be entirely justified. In that way you may make each worker not only eager to do his work in order by it to add to the total production and secure from it an extra compensation for himself, but you may also make him watchful of the work of others so that others do not hold him back in his work by their own negligence, laziness or absence.

A number of profit-sharing systems are now in effect. I know them fairly well, and I am frank to say that I do not believe any one of them has been worked out so as to be generally applicable or to be based on a just and equitable foundation. Yet it is the feeling of many, and I share it, that in the proper solution of the profit sharing scheme lies the most effective way of checking the growing unrest of the workers and securing the highest type of efficiency. It ought to be our problem, recognizing that it is a difficult problem, to find the right plan, and to that extent to benefit ourselves, our workers and the country.

Adjustment of Labor Disputes

The fourth element in the employment relation is what I might term the labor policy; it has to deal with administration and organization questions and with the adjustment of disputes. Administration relates to authority and discipline. Authority may be a line or functional arrangement. The line arrangement is the military system, where each man has his superior and that superior has another superior and he has to go through the line; it is a series arrangement. Or it may be a functional arrangement in which one worker may have a number of bosses. Frederick W. Taylor worked out the functional system of management in his system of scientific management. It is the parallel arrangement—abreast, instead of one ahead of the other. Discipline refers to promotion, demotion and discharge.

When we come to the other phase, that of organization, there is a great deal that can be said, and I hope that something may be said in the discussion. It has to do with the open and closed shop, with individual and collective bargaining. Let us make clear to ourselves what is the open and what is the closed shop. One of the troubles confronting us is the vagueness of terminology; we have not clear definitions of many of the terms that we use. Generally, we understand by an open shop that type of shop where membership in a labor union does not affect ability to secure employment. The closed shop may be divided into a closed union shop and a closed non-union shop, the first one making membership in a labor union a necessary element in securing employment, and the second one making it a cause of being denied employment. Recently some one gave as a definition of an open shop that it is the type of an organization in which the constitutional rights of no man are abridged or interfered with.

Collective Bargaining

Collective bargaining, which I referred to before, is the desire to give the working man a representative voice in discussing with the employer problems of employment, and, as far as possible, in determining with him jointly how his condition shall be established. Now bear this one thing in mind: individual bargaining, that is bargaining between the foreman and the individual workman, may be maintained in the open shop and in the closed non-union shop. Collective bargaining, where a committee of workers deals with the management in respect to the conditions of all workers, may be maintained in an open shop as well as in a closed non-union shop, which is too often forgotten. Collective bargaining does not necessarily mean labor unionization; it may lead to labor unionization. If collective bargaining in an open shop is not properly handled and properly watched, it may lead to labor unionization. If it is properly handled and properly watched, collective bargaining in an open shop may be the very best deterrent to unionization.

Through the awards of the National War Labor Board many employers have been forced to institute collective bargaining schemes in their establishments. I believe these awards to be fundamentally wrong in conception. The articles of agreement, on the basis of which that board operates, state that the right of the workers to organize and to bargain collectively with their employers shall not be denied or interfered with. That is one thing; it is another thing to say that the employers must collectively bargain. I think that the National War Labor Board should have made an award that the employer shall, under their direction, institute an election to find whether or not the majority of the employees want to maintain the personal relationship in settling questions of wages individually with their foreman and in settling questions of their working conditions, or whether they want to turn over these functions to a committee selected by themselves. If the majority says, "We want to maintain the individual relationship," and I believe the majority in most shops will say so, then no labor board has a right to dictate to the employee or the employer that they must institute collective bargaining. If, however, by vote they want collective bargaining through shop committees, then the War Labor Board should set in motion the necessary machinery to have shop committees selected.

Believed to Be a Remedy for Labor Ills

It seems in the people's mind that some way of collective bargaining is going to be the general remedy for all industrial ills. I do not think it will. There is a good deal to be said in favor of giving the employees in our employment a chance to express themselves collectively on certain matters. If you will maintain, as I am sure you will always maintain, as a fundamental principle that cannot be argued with because it is so fundamental, namely, the maintenance of the open-shop condition, then you can well afford to start, and should even set to work to find out in what way, suited to your employment, your local conditions and the temper of your people, you can best introduce some scheme of representation that will strengthen and not weaken your open-shop policy.

Working conditions relate to hours of work, facilities for the worker, sanitation and safety and medical supervision. I have already touched upon medical supervision in speaking of physical examination. I only need to add that it is becoming a quite universal prac-

tice to deal more broadly and more comprehensively with the health of the workers and the proper sanitary conditions of the shop. Regular physicians are now frequently placed in charge of the medical supervision of employees, and more will be done in this respect in the future. Contrary to the belief of many, but based on the experience in hundreds of concerns, it pays even in the medium-sized shop, a shop of five hundred employees and up, to employ a physician on full-time service as a staff member, who gives his whole time to the maintenance of proper sanitary standards and the supervision of the health of the employees. If he has any spare time he can assist in the hiring of employees and help in another and even more important function—what the minister is generally to the men and women of our population, the right type of doctor can become in the shop. With detriment to neither side, but with benefit to both, not as a spy but as a moderator, he can smooth out many grievances, which are often only alleged grievances, and which, if they are smoothed out right at the beginning, will save a whole lot of trouble and money expenditure and heartburning later on.

As to safety and sanitation, I need to say very little. Your association has a very enviable record for having done some of the most effective work in this field, and I know that under the leadership of your committee on safety and sanitation, you will continue to do it. As regards facilities, light, whether artificial or natural, heat, artificial or natural, proper equipment of the shop, and what tools should be given to the workman and what tools he shall be required to buy himself, these are some of the questions that are of concern to the workman, and about which he should be informed.

Hours of Work

Another very important consideration is the hours of work. Hours of work may refer to the work periods in the forenoon or afternoon, or to overtime and holidays and rest periods. You know how important this question of hours of work is looming up, and how important it will loom up in the readjustment period. The eight-hour day, so called, is in the air; it is being forced by economic pressure and by legislative enactment. A great deal can be said on that subject. This, I want to say right here: the term "the eight-hour day," has a number of meanings and the vagueness of understanding of the term is very universal.

The Straight Eight-Hour Day

There is the straight eight-hour day, which I sometimes like to call the social eight-hour day, because it is brought about entirely by legislative action for the purpose of maintaining the health and social comforts of the employees. It means that an employee can work only eight hours in twenty-four, that no overtime work is permissible except in an extraordinary emergency, and that the employer will be penalized for letting anyone work more than eight hours. If that is extended over a period of six days, it gives us the forty-eight-hour week, but if, as is usually the case, there is a half holiday on Saturday, making five and a half work days only, it gives us the forty-four-hour week; so in talking about the eight-hour day, we want to ask immediately the other question, "Do you mean the forty-eight-hour week, or the forty-four-hour week?"

The Eight-Hour Shift

Then there is the eight-hour shift, which may be a social eight-hour day, because it can be predicated on the claim that for his health and social well-being, the employee should not work more than eight hours. The eight-hour shift is also a problem in efficiency and management. In continuous industries there is possible only a division into two twelve-hour shifts or three eight-hour shifts. Possibly, if the day had 27 hours, it would be divided into three nine-hour shifts. Then there is the basic eight-hour day, now so much in the people's mind. In principle it has first been introduced by voluntary action by the manufacturers themselves, who worked a certain number of hours on a straight-payment rate, and then paid an additional rate for any work beyond these hours. Out of it grew the basic eight-hour day. Few talked about it, but when the Adamson law was enacted and the term was written right into the law, then it became a great issue. It began to confuse people's minds and I should not be surprised if most of you think that under the Adamson law the railroad employee operating trains is getting time and a half for all hours above eight. Nothing of the kind is true. The railroad employee worked ten hours heretofore and got a certain amount of money, let us say $5, and then the Adamson law decreed that that amount of money must be distributed over eight hours instead of ten, which meant a 25 per cent increase in rate of pay. But for the ninth hour and for the tenth hour of work the railroad employee gets now exactly the same rate of wages, and not time and a half or any increased rate.

The Basic Eight-Hour Day

The basic eight-hour day, as we now understand it, means an increased rate, usually time and a half, for every hour worked above eight in a single day, as a penalty upon the employer, so that he would not have his workmen work more than eight hours in a day, unless it was absolutely necessary. In this sense, the overtime feature has proved a failure; it is not a penalty on the employer, but is an inducement to the employee to retard his work during the day so that he be practically obliged to work overtime at vastly increased rates. It is clear, therefore, that the basic eight-hour day is not a question of hours, but one of wages.

The Basic Forty-Eight Hour Week

When the basic forty-eight-hour week is meant, overtime rates are paid only after 48 hours have been worked in a week at regular rates. Thus if a man is out on Tuesday, whether for justified or unjustified reasons, he may be given a chance to make good on that time in the evenings or on Saturday afternoon, but he is not paid an extra rate until, either by regular work all the time, or by making up the lost time, he has worked 48 hours and is working more.

I am not here arguing for a straight eight-hour day, a basic eight-hour day, or a basic 48-hour week. I wish to say, however, that if the production of the world can be maintained by eight hours work a day, thereby bringing some of the luxuries, by their wholesale production, down to the ordinary comforts for all the people, then it would be foolish to work more than eight hours, and if the production of the world can be maintained by working only four hours a day, then we all would gladly work only four hours and spend the rest of the time in other pursuits.

Can the production of the world, and especially can the production of the world during this readjustment and reconstruction period, be maintained by working only eight hours a day? That is the question. If it cannot, then it is a crime to have the hours of work limited to eight, whether by legislation or economic pressure. When, however, as a matter of policy, or on account of pressure brought to bear by State and Government officials having authority to dictate, you are forced to make a readjustment of work conditions to some basic arrangement, then I would advocate that you introduce the 48-hour basic week rather than the basic eight-hour day, for the former has less of the social evils in its train.

Betterment of Employees

Betterment, the sixth phase of the employment relation, refers to recreation, health, education and thrift. There is a good deal that an employer may do in these respects and justify, for the expenditure of the money of his stockholders for some such schemes, within his employ or directly connected with it, is for the purpose of building up the morale of his workers and of getting higher efficiency.

I have sketched out here in broad outlines the important phases and sub-divisions of the employment relation as the economic phase of the labor problem. Our endeavor in working out this problem must lead

to the goal of individual opportunity for every worker, low waste and high productivity, a low labor turnover and a high morale among all workers.

The Goal Is Contentment

And to what end is all this? I said at the beginning that work is an instinct and an economic necessity of our life. Next to the propagation of the race, work is the chief purpose of life. If that be so, then I maintain that we ought to organize our work in such a way that it will redound to the contentment of all engaged in it. Only if we are content can we produce most; only if we are content can we produce best, with the least injury to ourselves, finding real happiness and pleasure in this work and radiating that happiness and that pleasure into our leisure time of life and into the lives of all of those who come into contact with us. And so, as my religion of work, I want that work so ordered that through the various means and channels here outlined, leading to the goal here specified, it may result in the contentment of all engaged in the teamwork of life.

Production of Tungsten Ores and Tin in 1917

WASHINGTON, Nov. 26.—According to an official estimate sent to the Department of Commerce by Vice-Consul Carl C. Hansen at Bangkok, the output of metallic tin for last year was about 9466 net tons, as compared with 10,078 tons for the fiscal year 1916. The Siamese Government collects a royalty on tin and tin ore amounting to about 25 per cent of the market price in Singapore, the fluctuation in value at the latter place being adjusted and the rate reckoned according to a "royalty scale" published in the Siamese Government *Gazette* from time to time. A recent issue of this *Gazette* notified an extension of the "royalty curve" to meet the increased price of tin. According to telegraphic advice from Singapore the price of tin on Aug. 29 was $162 Mexican per picul, and at that figure 50 tons had been sold.

The approximate quantity of tungsten ore recovered during 1917 was 800 short tons, against 584 tons in the previous year.

A recent order in the Government *Gazette* announced that the royalty on tungsten ore, which was previously collected at the same rates as in force on tin ore, had been reduced to 10 per cent ad valorem.

According to the reports of Consul Edwin N. Gunsaulus at Singapore, the exports of tungsten ore from the Federated Malay States for the year 1917 amounted to 761.31 gross tons, as against 515.47 tons in 1916. In 1913 the production of tungsten ore in these states was only 225.06 tons, so that the output has more than trebled since the outbreak of war. The export figures for 1917 do not accurately represent the production of tungsten ore, some of the ore included in the above figures having been sent to the Federated Malay States for treatment and re-exported. The actual output of the mines for the year is given at 794 short tons. The exports of wolfram for 1917 amounted to 472 tons as against 348 tons in 1916. Scheelite was exported in 1917 to the extent of 381 tons, as compared with 229 tons in 1916. The total quantity of tungsten ores from other countries sent to the Federated Malay States for treatment and re-exported during the year 1917 amounted to 275 tons. In addition to the above 140 tons of wolfram were exported from the Non-Federated State of Kedah, in the Malay Peninsula.

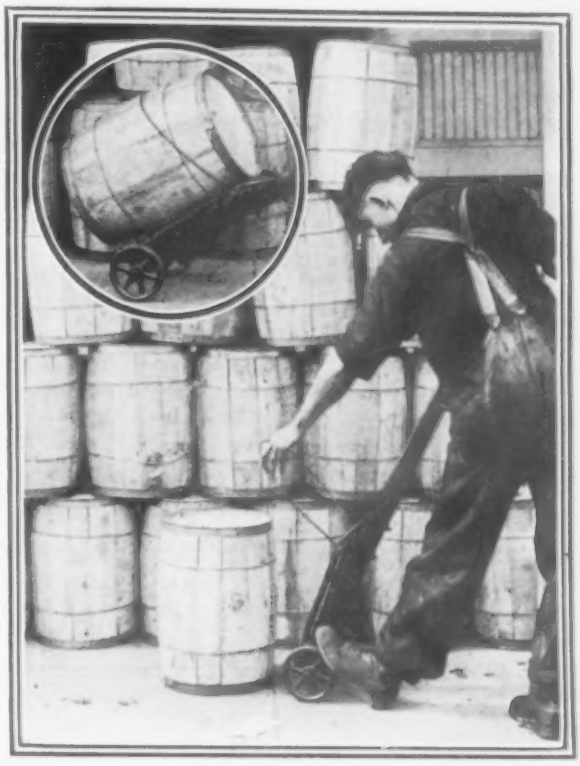
The annual salesmen's convention of the Miner-Morse Corporation, Erie, Pa., recently held in that city, was brought to a close by a banquet at which the president, Pierre A. Miner, gave an address on salesmanship and a review of the company's growth of business for the past two years. Frank G. Diffin, New York, acted as toast-master and toasts were responded to by officials and others connected with the company.

The Electro-Metallurgical Co., Niagara Falls, N. Y., will build an addition to its plant in that city at an estimated cost of $15,000 for the manufacture of ferro alloys.

The Kent Keg-Konveyor

A truck equipped with a special device of value for the rapid delivery of kegs with light or heavy load is being manufactured by the Kent Machine Co., Kent, Ohio.

The device is simple in its construction and almost automatic in its action. When the operator becomes accustomed to its use, he approaches the keg with the hoop up against the handle of the Konveyor and, by a swift movement, throws the hoop over the keg and



Truck and Device Designed for the Rapid Delivery of Kegs

brings the handle down ready to start with the load. Two spurs at the lower part of the device help to pick up the heaviest load and prevent the keg from slipping in transportation. Different sizes may be handled with the same device.

The wooden parts are made of ash, with wrought iron braces and parts throughout. Particular attention has been given to the design in order to make the truck withstand rough handling.

Milliken Brothers in New Location

The Milliken Brothers Mfg. Co., Woolworth Building, New York, recently organized to succeed Milliken Brothers, Inc., has purchased the plant of the James H. Young Stone Co., 136th Street and East River, for its proposed new works. The structure, which is of mill building type, with about 40,000 sq. ft. of manufacturing area, will be equipped as a fabricating works for building construction and the manufacture of transmission and radio towers, steel poles and other all-steel specialties of the company. It is equipped with an overhead electric traveling crane. An adjoining plot has also been secured, making a total of about two acres of property, with water and rail facilities. A galvanizing plant is projected for steel transmission towers and other products. In connection with its operations the company will manufacture its standardized truss unit buildings, designed by J. E. Jennings, vice-president and secretary, for general industrial service, structures of this type having been heretofore largely devoted to Government work. C. T. Clack is president and Robert Grant treasurer of the company.

The American Machinery Syndicate has removed its offices to larger quarters in the Commercial Engineers Building, 35 West Thirty-ninth Street, New York.

A War-Time American Ordnance Plant*

The Tacony Ordnance Corporation the First Company to Erect a Complete New Gun Plant for War Purposes

ONE of the features of the war program of the United States has been the rapid building of a considerable number of gun-forging plants. Realizing that guns and more guns were essential in winning the war, Government authorities, not long after this country became a belligerent, set out to find means to increase the output. It was at once appreciated that the making of gun steel is by no means a simple proposition, particularly in its metallurgical phases.

One of the first interests approached, outside of the few large gun-making plants already established, was the Tacony Steel Co. at Tacony, Philadelphia. The outcome of several conferences between War Department officials and J. B. Warren, secretary and general manager of the Tacony Steel Co., and George Satterthwaite was the organization of the Tacony Ordnance Corporation. This was in August, 1917. Plans were immediately drawn for the construction of a thoroughly modern steel-making and gun-forging plant, and in less than 10 months the Tacony Ordnance Corporation was producing two important sizes of large caliber gun forgings. The completion of this plant in so short a time was a signal achievement. Construction was begun in October, 1917, and shipment of forgings began in June, 1918.

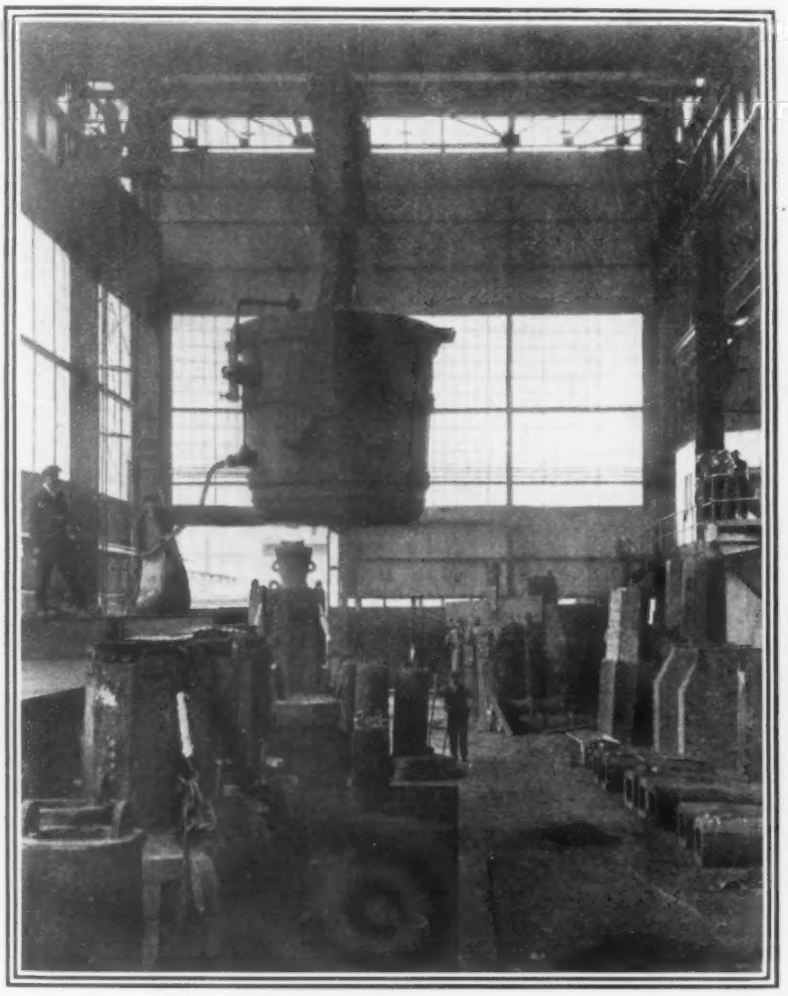
Naturally, it is the steel making department on whose output the success of the whole undertaking depends. No matter how complete the machine shop, nor how careful the heat treatment, the steel incorporated in the guns must be of the best at the start. Acid open-hearth steel has been regarded both here and in Europe as the only steel produced in quantity to be incorporated in high-class ordnance, and hence an acid open-hearth department was decided upon.

The open-hearth building, like all the company's buildings except the machine shop and offices, is of structural steel with corrugated asbestos forming the side walls and roof. The charging platform is roomy and on the hottest days the inconvenience resulting from the heat of the sun or the furnaces is negligible. The building rises to an uncommon height above the platform and the furnaces. There are two 40-ton oil-burning furnaces, a 3½-ton charging machine, a 60-ton ladle crane, a 30 and a 10-ton traveling crane. The ingots produced are octagonal in shape, varying from 26 in. to 40 in. in diameter, and from 19,000 to 40,000 lb. in weight.

For its oil supply the company has built a pier extending into the Delaware River. To this in winter and summer barges bring the oil from a nearby refining company. Ample oil storage capacity has been provided. Between the open-hearth and forge buildings is the stock-yard, traversed by a 10-ton crane.

The forge shop, a building of corrugated asbestos and steel, houses two hydraulic presses, one of 2000 and the other of 1000 tons capacity, oil-burning heating furnaces, hydraulic forging cranes and electric traveling cranes. In this department the ingots are pressed down to proper sizes. From here they are transferred to the heat-treatment plant over standard gage company trackage.

Next to the open-hearth the most important department is that devoted to heat treatment. This building, one of the largest of the industrial group, has no windows. It contains green annealing and drawing furnaces, some of the latter being of the car-bottom type, and three heating furnaces, two of which are circu-



Pouring Acid Open-Hearth Steel Into Large Octagonal Ingot Molds at the Plant of the Tacony Ordnance Corporation. The spaciousness of this portion of the open-hearth building is a feature

*Because of censor restrictions, a discussion of the metallurgical phases of the steel-making process used by the Tacony Ordnance Corporation and some remarks on heat treatment were stricken from the article originally prepared by THE IRON AGE. This is also true of various details as to size of buildings and equipment

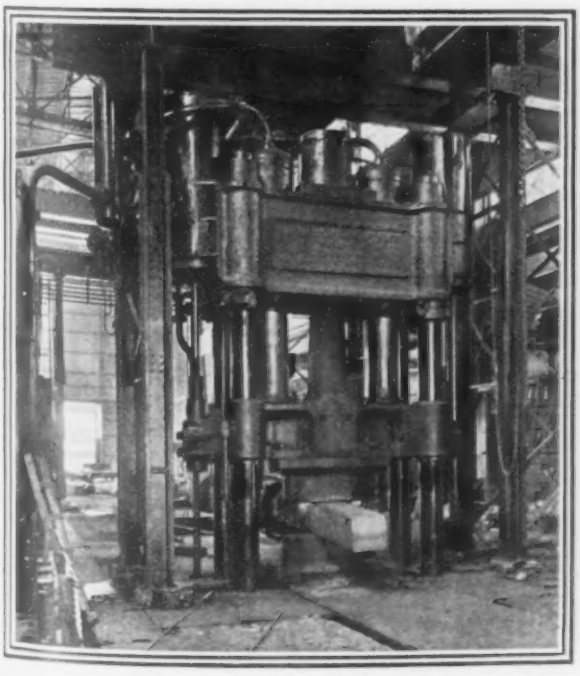
Charging Side of One of the 40-Ton Acid Open-Hearth Furnaces. The unusual roominess of this part of the building is striking

lar. The long tubes and other forgings are handled in the larger of the two vertical furnaces shown by an illustration. Quenching tanks are placed in a pit between two of the heating furnaces. Two large traveling cranes serve this department.

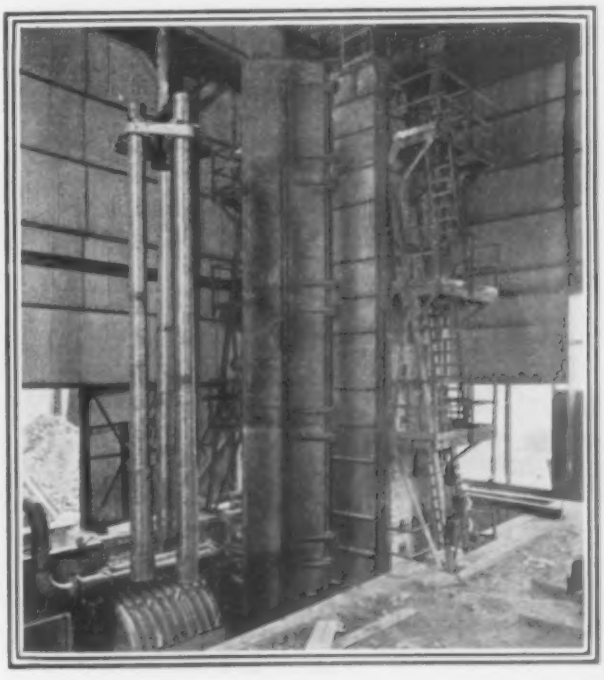
A pyrometer outfit is used to regulate the temperatures, which must be uniform and exact to insure the proper structure of the gun steel. Women have been employed and trained to regulate the pyrometers.

From the heat-treatment building the properly annealed forgings are transferred to the machine shop, a large brick building containing a complete equipment of large boring and turning lathes, planers, shapers, radial drills, traveling cranes, etc. The machine shop has spacious aisles and abundance of light and air. From this building the rough-turned and rough-bored forgings are shipped to finishing plants for final machining and assembly.

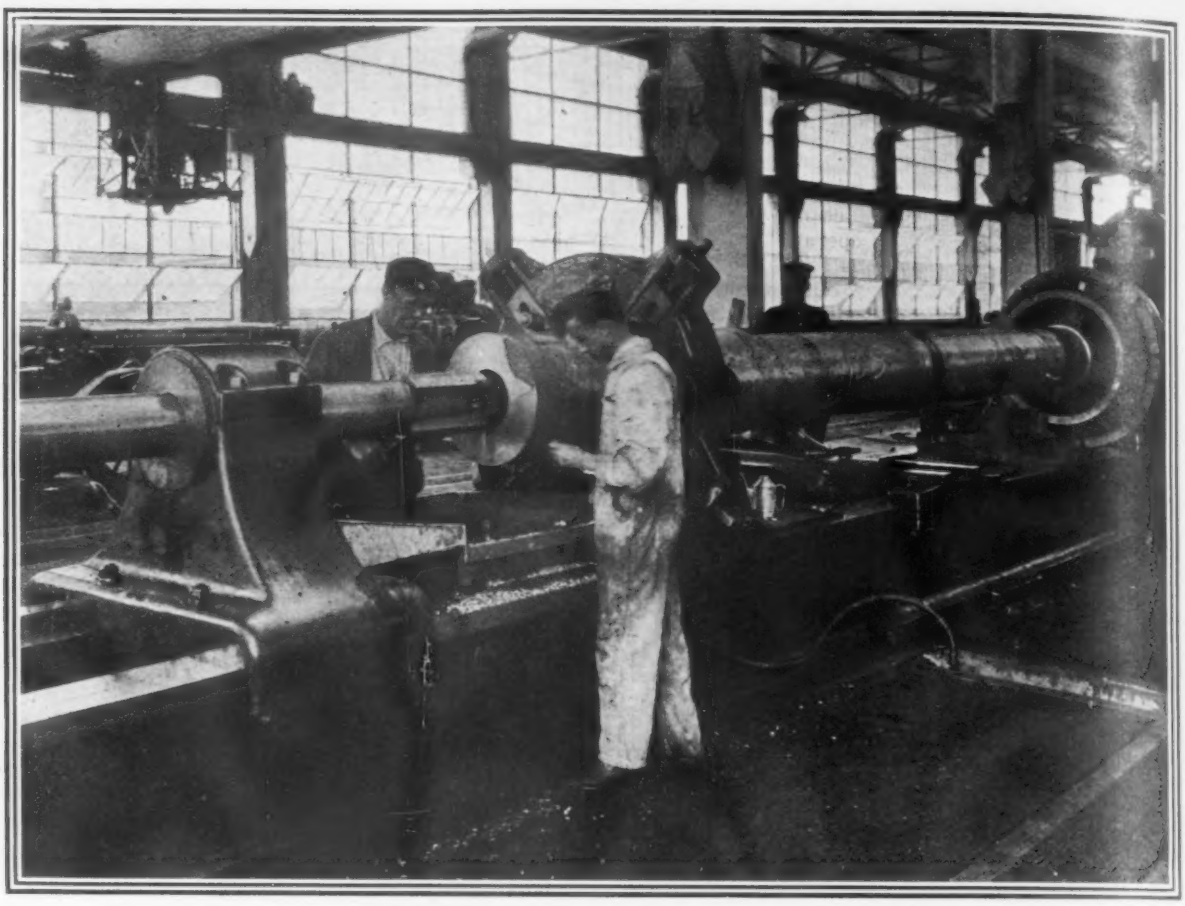
A separate building of brick houses the chemical and physical laboratories. Here all metallurgical and heat-treating processes are regulated. A



The Large 2000-Ton Hydraulic Press in the Forge Shop



The Large Open-Side Vertical Heating Furnace in the Heat-Treatment Department



One of the Large Machines in the Machine Shop Boring an 8½-In. Hole in One of the Rough-Machined Gun Parts

complete chemical, physical and metallographic history of each forging is made and preserved.

The power house adjoins the forge shop and contains the large boilers, soot blowers and automatic stokers. In addition to the industrial buildings, the plant has its equipment of service structures, office building, emergency hospital, commissary building, etc.

When the plant was started girls were employed wherever possible. They have been successfully trained to serve as crane operators, band saw operators, tool issue clerks, inspectors and pyrometer attendants.

J. B. Warren, secretary and manager of the Tacony Steel Co., is president of the Tacony Ordnance Corporation; George Satterthwaite, formerly general superintendent of the Midvale Steel Co., is vice-president and general manager, and W. C. Pearson is second vice-president and secretary. These, with Henry T. Stetson of New York, constitute the board of directors. Mr. Satterthwaite was connected with the Midvale Steel Co. for 15 years, in which time he was head of the forge department, advanced to the position of assistant superintendent of the entire plant and then became general superintendent.

Diminished Bituminous Coal Output

WASHINGTON, Nov. 26.—Reports of decreases in the output of bituminous coal are worrying the Fuel Administration. Even the improvement in the influenza situation failed to stop the decline in production, which reached the low mark of 9,707,000 net tons in the week ended Nov. 16, a decrease of 661,000 net tons below that of the preceding week and of 25 per cent from the September high-water mark.

The Fuel Administration is now revising its figures on the requirements for the remainder of the coal year, but it will take several weeks before the new estimates can be completed. It is safe to say, however, that the output will have to be increased if there is to be no interference with the industrial and domestic consumption of fuel this winter.

The production of beehive coke in the week ended Nov. 16 was 553,000 net tons, against 558,000 tons in the preceding week. The output of by-product coke decreased from 581,665 tons in the week ended Nov. 8 to 571,118 tons in the week ended Nov. 16. W. L. C.

The Philadelphia & Reading Railroad has reduced the working hours at its Reading, Pa., shops. Employees at the locomotive shops will work 57½ hours a week instead of 60, while those at the car shop, which has been on a 60-hour schedule, will work 55 hours.

Increase in October Lake Ore Shipments

Shipments of iron ore down the lakes from the Lake Superior region in October were 8,541,593 gross tons, compared with 8,193,892 tons in October, 1917, an increase of 347,701 tons or 4.24 per cent. The following table gives the October and season shipments by ports and the corresponding figures for 1917 in gross tons:

	October, 1918	October, 1917	To Nov. 1, 1918	To Nov. 1, 1917
Escanaba	1,015,089	995,052	6,052,311	6,162,774
Marquette	437,229	461,284	3,250,207	2,870,100
Ashland	1,255,176	978,029	6,934,371	6,603,238
Superior	1,887,284	1,876,525	13,064,201	12,253,271
Duluth	2,920,070	2,497,629	19,281,792	17,686,397
Two Harbors	1,026,745	1,385,373	8,287,989	8,677,218
Total	8,541,593	8,193,892	56,870,871	54,253,598
1918 increase	347,701	.....	2,617,273	.....

For the 1918 season the increase is 2,617,273 tons or 4.82 per cent, as against a decrease for the same period a year ago of 3,679,248 tons. The total to Nov. 1, 1916, was 57,932,846 tons, the movement this year being about 1,000,000 tons under that of two years ago. The Duluth percentage to Nov. 1, 1918, was 33.91 per cent of the total against 32.60 per cent to Nov. 1, 1917, while the Great Northern dock at Superior shipped 19.10 per cent of this year's total against 18.60 per cent to Nov. 1, 1917.

EMPLOYMENT SERVICE PLAN

Outline of Its Operation in the Waterbury, Conn., District

What is known as the Waterbury employment service plan has aroused considerable interest because of its simplicity, straightforwardness and success. A set of the forms employed in its operation is here submitted and the following directions are given for their use, these instructions being prepared for the employers and sent to them by Ralph W. Budd, superintendent of the Waterbury office, U. S. Employment Service, Department of Labor:

1. All employers must apply for official authorization, Fig. 1.

A. This form must be hung in conspicuous place in employment office at plant where party duly authorized to hire is located.

2. All exits from plants must be reported daily on form F, Fig. 2.

A. Name of firm reporting and date are entered at top of form.

B. Name and address and reason for leaving of each person who leaves the plant must be entered.

C. Any employee who absents himself, or herself, for three consecutive days without sufficient reason must be reported through an exit report.

3. A. Discharge privileges should be withdrawn from foremen.

B. Employees upon giving notice to foremen of getting through should be given a slip to a special representative of the plant located in plant's employment office, for interview. This representative must use every means within his power to satisfy employee, either by transfer to another department, or by increase of pay, if deemed advisable or settlement of such other grievance as employee may have.

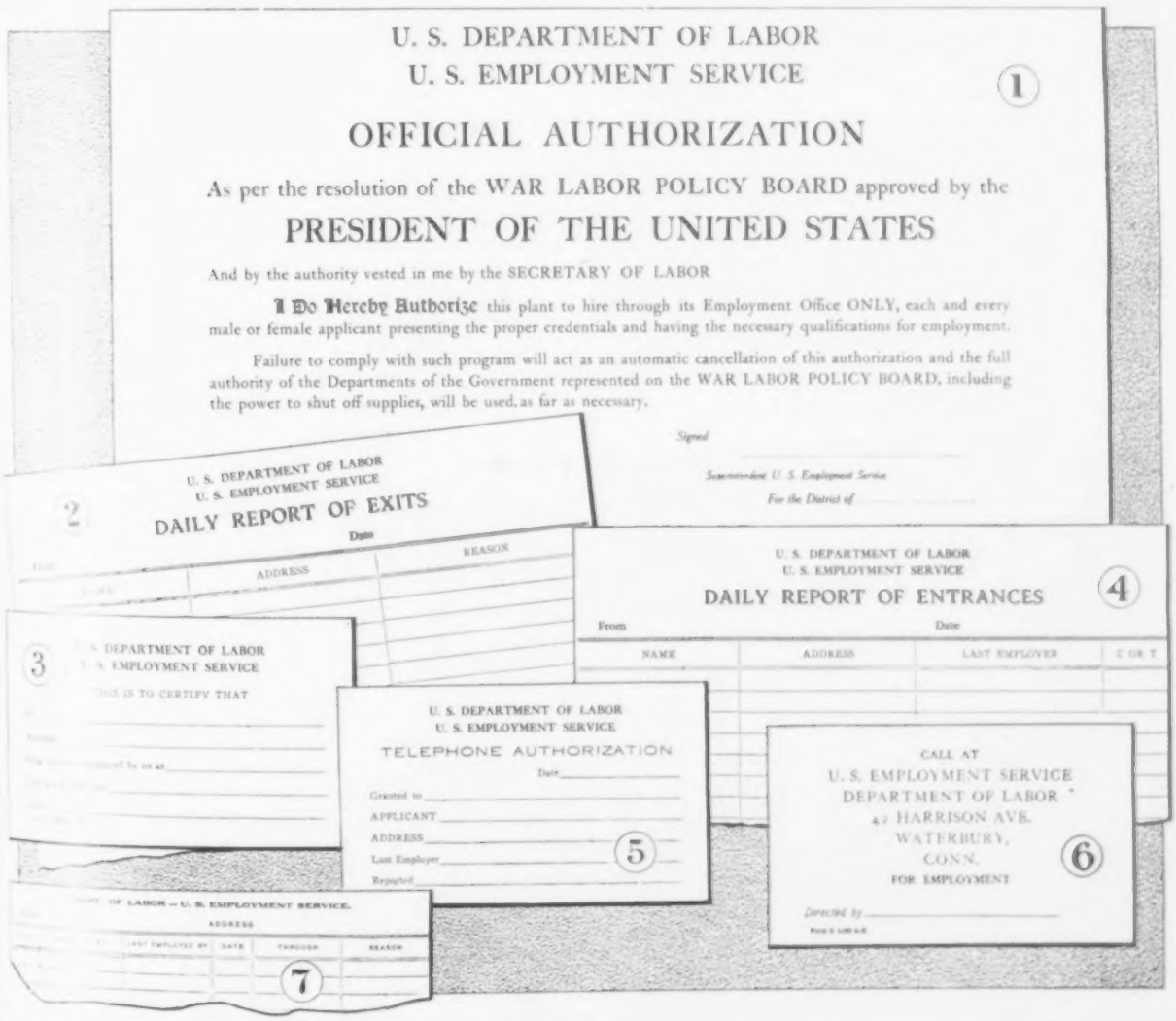
C. In case employee still desires to change his employment, through card must be issued immediately. See Fig. 3. Under no conditions must plant set or stipulate any definite notice that employee must work before through card is issued to him.

D. Through card must be granted by employer to employee upon request, provided satisfactory arrangements for retaining the service of the employee cannot be made.

4. Employee may take through card to any plant in jurisdiction and be hired upon its presentation, provided plant to which applicant is applying needs the service of the applicant.

5. Plant, upon hiring applicant, takes up through card and reports to U. S. Employment Service Office on daily report of entrance, known as form E, Fig. 4, giving firm name and date at top of form, name and address and last employer of each applicant hired. In column marked C or T, meaning "Card" or "Telephone," the authorization of the plants to hire must be entered. In case applicant has presented himself with a through card, received from last employer, the letter C must be used, and the through card which is taken from the applicant must be mailed with the daily report of entrances to the U. S. Employment Service Office. In case applicant does not have a through card, plant must telephone U. S. Employment Service for authorization to hire. If the U. S. Employment Service Office records show applicant clear with last employer telephone authorization is granted and form B Fig. 5 is kept on file awaiting receipt of entrances. The letter T must be put in authorization column showing that plant hiring had telephone authorization for that particular applicant.

6. If applicant has neither through card or is not


U. S. DEPARTMENT OF LABOR
U. S. EMPLOYMENT SERVICE
1
OFFICIAL AUTHORIZATION
As per the resolution of the WAR LABOR POLICY BOARD approved by the
PRESIDENT OF THE UNITED STATES
And by the authority vested in me by the SECRETARY OF LABOR
I Do Hereby Authorize this plant to hire through its Employment Office ONLY, each and every male or female applicant presenting the proper credentials and having the necessary qualifications for employment.
Failure to comply with such program will act as an automatic cancellation of this authorization and the full authority of the Departments of the Government represented on the WAR LABOR POLICY BOARD, including the power to shut off supplies, will be used, as far as necessary.
Signed
Superintendent U. S. Employment Service
For the District of
2
DAILY REPORT OF EXITS
Date
ADDRESS
REASON
3
THIS IS TO CERTIFY THAT
4
DAILY REPORT OF ENTRANCES
From
Date
NAME
ADDRESS
LAST EMPLOYER
C OR T
5
TELEPHONE AUTHORIZATION
Granted to
APPLICANT
ADDRESS
Last Employer
Reported
6
CALL AT
U. S. EMPLOYMENT SERVICE
DEPARTMENT OF LABOR
47 HARRISON AVE.
WATERBURY,
CONN.
FOR EMPLOYMENT
Directed by
7

Forms Used in the Waterbury Employment Service Plan

granted a telephone authorization, form D, Fig. 6, must be issued to applicant directing him to U. S. Employment Service Office. Upon applicant presenting himself to U. S. Employment Service Office authorization clerk in that office gets in touch with former employer and tries to clear applicant. In case former employer desires an additional interview applicant is requested to report back to former employer for interview for receipt of through card.

In case applicant is cleared over telephone with last employer by the U. S. Employment Service Office, regular U. S. Employment Service Office applications are made out and applicant is given interview card and directed to plant issuing the direction card or form D, Fig. 6.

A complete record of applicant's transfers is kept as confidential information in U. S. Employment Service Office on form known as Individual Card Record and known as form A, Fig. 7, and is kept up to date by the report of entrances and exits made daily by the plants.

A Modern Producer Coal-Handling Equipment

The entire producer plant, with the exception of the two Wood producers, of the Fairfield Glass Co., Lancaster, Ohio, was designed and manufactured by the Jeffrey Mfg. Co., Columbus, Ohio. The coal crushing and elevating equipment is shown in Figs. 1 and 2.

The coal received at the plant drops from the cars into a 12-ft. square receiving track hopper, the rails over hopper being carried by heavy steel girders supported from concrete walls. The hopper plates are sloped sufficiently to give a self-cleaning action.

A reciprocating plate feeder takes the coal from the hopper at a uniform rate of 25 tons per hour, delivering to the foot end of an inclined apron conveyer. This apron is of two strands of malleable iron roller chain and 30 in. long double-beaded flights. It will be observed that the upright angles, termed lifting blades, allow a steeper angle for the apron and therefore less distance between the track and producer house.

A 24 x 24-in. single roll coal crusher is below the head end of the apron, and reduces the coal to the desired size. A 25-hp. motor is belt-connected to the countershaft of the crusher, and the apron and feeder are driven from the roll shaft. Wood shearing pins are in the arms of the crusher pulley and should any foreign object such as a coal pick or coupling link enter the machine the pins at once shear and the drive automatically disconnects. The feed arrangement also automatically stops.

The crushed coal flows by gravity from crusher to the boot of elevator. This unit is 67 ft. high. The buckets, which are 14 x 7-in., and of malleable iron, are mounted every 2 ft. on a single strand of No. 111 Hercules chain traveling at a speed of 200 ft. per min.

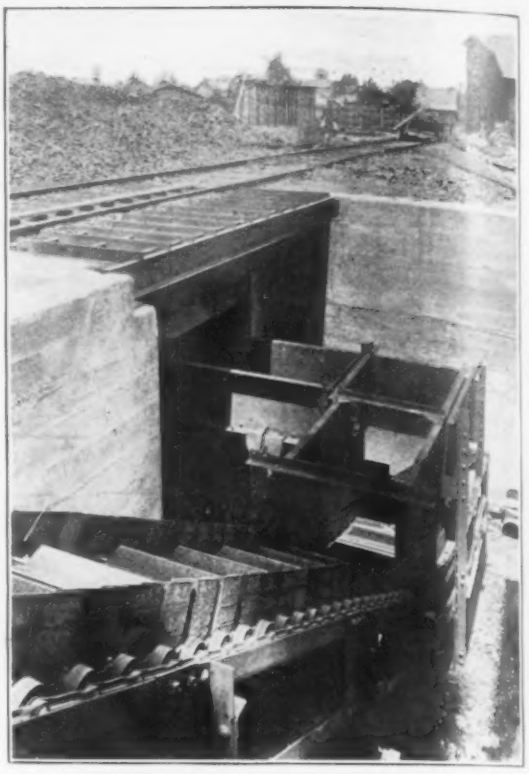


Fig. 1—Foot of the Inclined-Apron Coal Conveyer

All parts of the elevator are incased, a platform with hand rail being built around head end. This platform supports the 7½-hp. motor direct-connected to elevator countershaft. A ladder is attached to the elevator casing.

Twelve inch diameter steel plate chutes lead coal from elevator to the two 50-ton bunkers over gas producers. These bunkers are entirely inclosed by the building structure.

Great care was exercised in the design to obtain safety for the operators of the machinery and ample space was provided to give easy access to all parts.

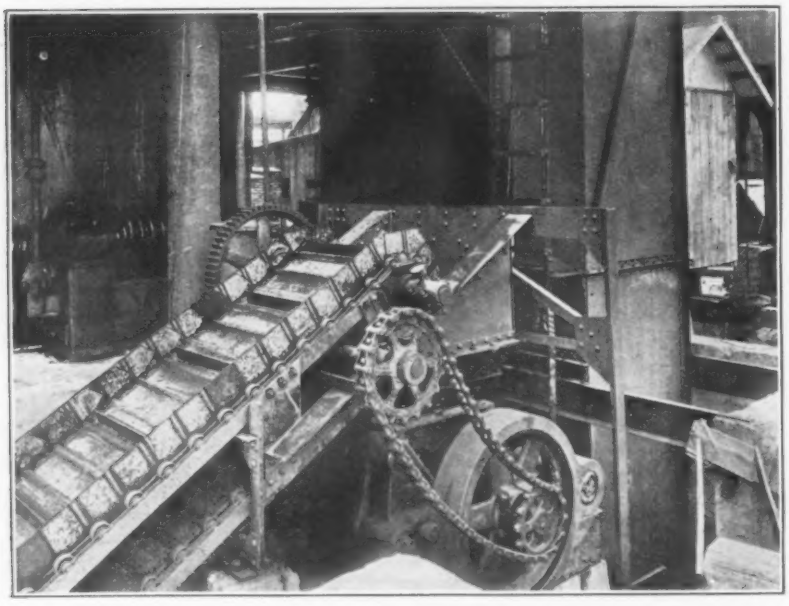


Fig. 2—Coal Crusher and Head End of Apron Conveyer

New Power Transmission Line

YOUNGSTOWN, OHIO, Nov. 26.—A new steel tower power transmission line, 18 miles long, built from the Lowellville generating station of the Mahoning & Shenango Railway & Light Co. to the new plate and jobbing mills of the Brier Hill Steel Co., was recently placed in operation. It is built on private right-of-way and constitutes one of the most important industrial developments of the Mahoning valley during the war period. The line will be of permanent industrial value to the district and will immediately afford improvement of electrical transmission in the Youngstown-Girard-Niles territory. It was built during the past summer by the Republic Engineers, Inc., and includes 194 steel towers, totaling 533 tons of galvanized steel; 36 miles of steel cable and 108 miles of copper cable.

The 84-in. Brier Hill steel mill has been completed and is ready to start, while the 132-in. mill is still being installed and will not be ready until some time after the first of the year. The mills were built and installed by the United Engineering & Foundry Co. under direction of the Brier Hill organization.

First Moves Toward Reconstruction

Developing Policy as to the Steel Industry —Allocations Discontinued—Price Fixing Not Decided—Conference on Machine Tools

WASHINGTON, Nov. 26.—After two weeks of uncertainty, tinged by hopefulness, the reconstruction situation, as reflected by the Steel Section of the War Industries Board here, begins to grow optimistic. This is doubly significant because the Steel Section, from J. Leonard Replogle down, is made up of hard-headed business men. All of them seem to see a prosperous outlook in the expectation that the steel industry will now go back to a self-contained business basis with a minimum of Government participation. The steel industry has always been competently managed and there is every expectation here that it will be able to handle the business of readjustment and of peace in a manner that promises prosperity.

Just how much Government supervision there is to be is still in doubt. A great deal of this depends upon the reconstruction program which is finally worked out. The work of canceling contracts is going ahead and although the Government organizations are supervising it, there is every indication that the industry is taking care of itself.

Future Price Fixing in Steel

All allocations have been discontinued. Priorities have been narrowed down to Government work, the conservation retrenchments have been cut in two. The big question remaining is the treatment of prices. For the current quarter the present prices will stand. So far it has not been possible to secure an authoritative opinion on this subject for the future. Nor is it likely that any definite stand will be taken until the American Iron and Steel Institute comes to Washington in two weeks for its December conference with the War Industries Board. That meeting probably will decide whether prices will be fixed for the first quarter of 1919 or whether the policy of Government prices is to be dropped.

As far as peace business is concerned there is no question that the industry will prefer the discontinuance of Government price fixing. But the tangled question of damages for unfinished contracts could be much more easily cared for if Government prices were used as a basis for settlement.

Another important item is the question of rail prices. The price fixing committee is still standing on the $55-$57 price for rails but the Railroad Administration refuses to yield. So far it has been able to maintain that veto. The fact that a great share of the overseas purchase of rails was based on the price which will be fixed by the Government may finally force the official promulgation of a price. There is nothing in sight, however, to indicate whether John Skelton Williams, who is handling this end of the Railroad Administration's business, will be able to force a lowering of the tentative figure.

Even without these questions, however, the general impression in the Steel Section seems to be that the steel industry can resume a normal activity with every assurance of good business. If present prices can be maintained it would, of course, make the labor situation easier, for it would help to maintain the present wage scale. This reservation must be made, however: That the industry seems sure to go upon an actual eight-hour day without overtime.

The decision to end the policy of steel allocations was made last week, effective for the end of the month. In announcing this decision to the industry, Director Replogle of the Steel Section sent out the following letter:

"It has been decided to discontinue steel allocations through this office after Nov. 30, 1918, and the various purchasing departments will deal direct with the trade on future requirements.

"Please continue all weekly reports up to and including Dec. 31, 1918, when you may suspend all reports to this office, unless otherwise requested.

"On behalf of Chairman Baruch and the Steel Division of the War Industries Board, I wish to express our sincere appreciation of your untiring devotion and the great ability you have shown in helping us to meet the enormous steel requirements during the greatest and most terrible of all wars, in which you have performed your functions in a big, broad way."

Pig Iron Shortage and Prices

One very interesting feature in all discussion of the outlook for the steel industry, here, centers about the pig iron situation. It is remarkable that the feeling exists that pig iron is more likely to go up than down. Every one who was willing to discuss the question insists that there is a shortage of pig iron in every market in the world. France alone, according to figures given the War Industries Board by Commissioner Tardieu, will be in the market for 2,500,000 tons of pig iron for its rehabilitation work. Italy has practically no pig iron and could use at least 1,000,000 tons. The same is true of most of the neutrals. Japan is reported to have paid $80 a ton for pig iron in Mexico.

Of course, the final effect of these demands upon the market price for pig iron in this country will depend upon the possibility of obtaining ships to carry it. An enormous overseas requirement for pig iron, if the latter cannot be shipped, would have only a speculative bearing on actual pig iron prices here.

Steel Exports Depend on Ship Room

The market for finished steel products abroad hangs on the same hook. There is no definite information available here. For the time being the monopolizing of ocean shipping for foodstuffs threatens to push exports of steel into the background. The demand for steel products, however, from the allied governments in Europe seems to be increasing and the steel people here believe that ways will be found to carry considerable steel across the ocean. They point out that steel is the basis for the speedy rehabilitation of the industries of France and Belgium. For that reason they believe Europe will help to get it into those markets. Commissioner Tardieu's figures for the finished steel products needed from the United States to carry out the rehabilitation program in France total 4,500,000 tons. This, added to his pig iron estimate, makes a total of 7,000,000 tons.

Export Co-operation of Independent Companies

Just how this foreign business is to be handled is still cloudy. The Government has not worked out a definite program for its participation in this rehabilitation work. To a great extent, of course, it will be left to the industry itself. Under the Webb law syndicates of exporters can get into the market without violating the anti-trust law. The United States Steel

Corporation has long had its United States Steel Products Co. To meet that organization, it is reported here that the important competitors of the Steel Corporation are organizing an export company backed by a steel tonnage that will almost equal that of the Steel Corporation. In it are to be represented most of the companies that have been prominent during the war days. According to the reports received here the new corporation will include the Bethlehem Steel Co., Lackawanna Steel Co., Republic Iron & Steel Co., Inland Steel Co., Colorado Fuel & Iron Co., Midvale Steel & Ordnance Co. and Brier Hill Steel Co.

The question of the size of the railroad business, to absorb the war cancellations, is still indefinite. In the main, it will depend upon the prospect of prices. There is little question that the railroads must have both rails and cars, but so far the indications in the office of the United States Railroad Administration here are that new contracts will have to wait until it is sure that prices are not to drop.

Railroad Purchases

Big orders for locomotives and freight cars made at maximum war prices are still unfilled. The retiring director general, Secretary McAdoo, is having his own trouble getting the railroads to accept these cars at war prices. So far their manufacture has been delayed by war work, but now it is expected that their delivery will be speeded up, despite a threat on the part of the railroad companies to force the cancellation of the orders. On the day that he announced his resignation Director General McAdoo gave out a statement of additions and improvements aggregating $909,000,000 to be carried out during the next 13 months. A great percentage of this falls directly within the scope of the steel industry. Mr. McAdoo's statement is given below:

> The equipment which has been ordered by the Railroad Administration and allocated to the railroads and not yet delivered is approximately 1415 locomotives and 100,000 freight cars, representing a contract price of approximately $366,333,355.
>
> As to immediate railroad additions and betterments (excluding equipment and new extensions) authority has been granted to the latest available date (Nov. 10) for the railroads and also for the 108 terminal and switching companies other than the class 1 roads, aggregating $533,860,502. Of this amount only $179,995,902 had been expended up to Sept. 30, 1918, and it appears probable that about one-half of the aggregate work thus authorized to be done in 1918 will not be done during this year.
>
> It is estimated that corresponding additions and betterments which must be authorized for the year 1919 will aggregate upward of $250,000,000, excluding equipment. It is also estimated that maintenance of way and structures will necessitate very substantial expenditures in order to bring the property up to standard. It would seem, therefore, that the following necessary expenditures remain to be made for this year and next, not including additional equipment:
>
> Amounts already authorized for additions and betterments to way and structures, probably not yet expended $293,000,000
> Equipment ordered and not yet delivered 266,000,000
> Additions and betterments to way and structures to be authorized for 1919 250,000,000
>
> Total $909,000,000
>
> It is evident, therefore, that a very substantial and absolutely necessary program will be carried forward by the Railroad Administration.

Machine Tool Cancellations

One section of the metal-working industries which is feeling the cancellation of contracts most sharply is the machine tool industry. The Government program for the adjustment of cancellations promised them insurance against actual loss. There seems, however, to have been some difficulty in carrying this through to the private orders. There has also been some question as to how liberal would be the adjustment of the cancellation of foreign government orders. A committee of the industry headed by J. B. Doan of Cincinnati, president National Machine Tool Builders' Association, came to Washington last week. It spent almost three days in conference with G. B. Merryweather, head of the Machine Tool Section of the War Industries Board, and with other Government representatives. The sessions were secret and none of the participants would discuss their progress. Neither would they give out any of the details of the cancellations or the sums affected. There was an air of pessimism about the meetings. Mr. Doan, however, said that the industry was satisfied with the promises made by the Government concerning the adjustment of Government contracts. It was a little more difficult to find out how the industry as a whole regarded the outlook. Some of the committee members seemed to think that peace business could absorb a considerable portion of the canceled war orders. In the meantime, however, others were slacking down their factories and seemed disturbed over the possibility of keeping their employees at work.

W. L. C.

Lifting Restrictions on Non-War Work

WASHINGTON, Nov. 26.—The work of lifting curtailments on civilian production continues to be one of the important occupations of the War Industries Board. The announcement of a 50 per cent abandonment of retrenchment orders covering a long series of industries has been extended. Among others the Board has added to the list a 50 per cent decrease in the restriction on the construction of trade and harness chains, porch swing chains and chandelier chains.

The chief task, however, lies in the question of wiping out all restrictions. This was done by a blanket order on non-war construction to accelerate the employment of labor. In the various industrial lines, however, the War Industries Board has taken the position that the curtailments may be made the basis for important peace-time economies. This is a question to be solved by the industries for themselves and their views will be accepted by the Board as controlling. For this purpose, it is summoning to Washington representatives of all the various industries and will take up with them in turn the possibilities of modifying the remaining curtailments so as to preserve whatever advantages may be gained by conservation.

It seems likely that practically all of the mandatory curtailments will be removed. Such as will be left will be voluntary to the individual industries. The purpose will be, as far as possible, to unite the industries on programs of standardization, which will be of real value to the future of the industries themselves.

Standardization of Finished Products to Continue

In the hardware industry, for instance, it has been found that the curtailments ordered by the Government resulted in the elimination of long lists of unnecessary types and fashions. One pocket-knife factory, alone, cut down a list of 3000 types to 75. These curtailments had not been made final when the armistice was signed. They were the result, however, of long and careful investigations by the various industries and the war service committees who formulated them hope to use them as the basis for industrial standardization. In the hardware industry this has been taken in hand by the Hardware Manufacturers' Organization for War Service. P. H. Robinson, acting manager, has sent a letter to the delegates in that organization in which he says: "Many of our members have, within the past few days, expressed their opinion that the conservation program, had it gone through, would have been beneficial. This subject will, undoubtedly, be brought up at the Atlantic City conference, as to whether it would be advisable

for the organization to continue this work in some form or other and each delegate should be prepared to express the opinion of his industry regarding the conservation program." He accompanies his letter with a blank to be filled and returned, which is as follows:

Industry .....
Delegate .....
Address .....

Report on proposed conservation program:

1. Total number of manufacturers in industry.....
2. Approximate number of items manufactured.....
3. Approximate number of items to be discontinued.....
4. Estimate saving in hours of labor, and in tonnage of fuel, that proposed reduction of finish would have effected .....
5. Estimate increased percentage of production made possible by proposed conservation.....
6. Estimate tonnage of material saved in proposed conservation .....

The automobile manufacturers have also asked the War Industries Board to "supervise" the industry during the period of transition. Chairman Baruch announced that the Board had modified the curtailment of the production of passenger automobiles to the extent of 50 per cent of the retrenchment originally ordered. This puts the industry on a basis of 75 per cent of its normal production. The memorandum sent to the Board by the industry was signed by Hugh Chalmers as chairman of the War Service Committee of the automobile manufacturers. In this memorandum the manufacturers say they have proceeded with the plan ordered by the War Industries Board of putting the industry on a strictly war basis by Jan. 1. Now they want the aid of the Board in retracing their steps to a 100 per cent peace basis. They ask a generosity of war contracts. To this Chairman Baruch answered that the Board had no control over such adjustments but would use its influence to secure generous treatment. Similarly, he explained that the Board has no control over the cancellation of contracts which the automobile manufacturers urged should be slow.

A general program for a "standardization bureau" that will perpetuate the "peace" work done by the conservation division of the War Industries Board has not been worked out. Chairman Baruch favors such an organization as part of an existing Government body. It might be added to the present functions of the Bureau of Standards of the Department of Commerce. So far, however, no step has been taken in that direction. It is likely that all of this will be part of the general reconstruction program to be presented to Congress by President Wilson.

Many of the important engineering industries have taken an interest in this standardization question. Manufacturers in many lines have already undertaken large elimination of types, sizes and capacity. Some of these are reported to favor Governmental help which may make it easy to put such standardization on a permanent national basis. One method that has been proposed would involve an agreement by the various purchasing agencies of the Government—for peace purposes as well as war—upon standard specifications for important material and machinery.

In an effort to absorb as great an amount as possible of labor and material released by war cancellations, the War Industries Board has canceled all restrictions of every kind on non-war construction throughout the United States. Formal notice to this effect was telegraphed to the chairmen of all the State councils of defense on Nov. 21 by D. R. McLennan, chief of the Non-War Construction Section of the War Industries Board. At the same time the Priorities Division, through Edwin B. Parker, commissioner, sent out the following notice:

All of the rules, regulations and directions issued by the Priorities Division of the War Industries Board, restricting building activities, and especially those contained in Circular No. 21, revised Oct. 15, 1918, and amended by section first of Circular No. 57, issued Nov. 11, 1918, are hereby, effective at once, canceled and revoked.

The action taken permits all building operations of whatever character, held up in the interest of the war program, to proceed. No further permits will be required from the War Industries Board or the State councils, through whom control over the situation in each State was maintained.

Immediately following the signing of the armistice, Nov. 11, the Non-War Construction Section took steps to loosen the restraints on the building industry, and in a formal order issued that day removed a great many of the barriers. Since then, and with a view to assisting the industry back to a complete peace basis as quickly as possible, a careful canvass has been made to determine whether the conditions obtaining in each State with respect to building materials, transportation and the supply of fuel and labor would warrant a removal of the remaining restrictions. In this investigation the Non-War Construction Section sought the views of the industry itself and of the State councils of defense. The replies received, coming from practically all the States, showed a unanimous opinion in favor of such action.

At the same time the War Labor Policies Board sent a letter to the chief executives of the principal cities, urging them to expedite public improvements wherever possible. It promised to aid in securing any authority or co-operation from the authorities in Washington, including the Capital Issues Committee. The Department of Labor is vitally interested in this effort to find work for our demobilized forces as well as for the war workers who are losing their positions. The letter says:

The amount of public works postponed on account of war conditions is very large. If a considerable portion of these delayed public works are well under way during the transition period from war to peace, they will greatly help in stabilizing employment and industry. The return of war workers into the essential industries of peace and the demobilization of our military forces can both be made more easily if the necessary public works of the municipalities of the United States are in full swing at that time.

As soon as your preliminary plans are agreed upon, the nearest office of the United States Employment Service will be anxious to receive approximate information concerning the number and kinds of workers needed for carrying out your plans.

What Governmental Organizations Are Doing

WASHINGTON, Nov. 26—The Government program for reconstruction is but little more definite than it was when the armistice was signed two weeks ago. It is now expected that President Wilson will tell Congress, next week, what he thinks ought to be done to assure a stable readjustment of our industrial life. The labor situation is still the chief disturbing factor and threatens to become worse as demobilization increases the unemployed lists.

In the meantime, the various Governmental organizations concerned are marking time, at least as far as positive progress is concerned. Where industries have been in a position to move toward a normal stabilization of their own accord—as in branches of the steel industry—there has been progress, but not on the part of the Government.

The War Industries Board has dropped the greater share of its priorities work. At first there was an inclination to retain the prerogative of fixing preferences even for civilian industries. This, however, was finally abandoned and the Priorities Division was ordered to limit its operations—except for emergencies—to the expediting of Government work. With the present highly centralized organization of the Federal Government, however, this, of course, includes not only the Navy, but shipbuilding, railroads, telegraphs and telephones as well. Army priorities were ordered discontinued.

The Conservation Division is being demobilized gradually. The first step was to cut off 50 per cent of all restrictions. As to the rest, each industry is to be heard in turn and the question of maintaining

Continued on page 1338

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Stop War Waste

The Government at Washington has not moved with due promptness in the cancellation of contracts for war material. Apparently the policy pursued has been based on the belief that the transition from war to peace operations must be gradual, no matter at what waste of funds raised by war taxation or at what ultimate cost to industry in delaying the return to economic production. If the business sense of the country were consulted, a heavy preponderance of opinion would be found in favor of the short cut to a peace basis.

Necessarily the drafting of the country's industries into war service came gradually. It took months to make the war program. At first only a fraction of productive capacity was called upon. In iron and steel the first plans made it seem that 5 per cent of the country's output would suffice; then by repeated enlargements it was made known that 10,000,000 tons a year of iron and steel products would be required. Eventually, as is well known, the industry practically came to a 100 per cent basis for war and essential needs.

The idea that demobilization of industry must proceed at a similar gradual pace is utterly uneconomic. Whereas in going into war the war needs of steel were unknown, it is now perfectly well known that certain products on which steel works and machine shops have been busy for months and are now busy in many cases, will be useless when made up. The sooner work is stopped on them and their conversion into scrap determined on, or some other method of salvage, the better. Weapons and materials of war already in the hands of this Government in France or awaiting shipment on this side represent hundreds of millions of dollars, and but a small part of all this will ever be used in war. Within the past week considerable steel has been shipped from mills to forging plants preparatory to its use for shells. The British Government stopped receiving such material more than ten days ago, so far as Canadian plants were concerned. It has also issued orders that no shells shall be received from Canadian finishing plants after Dec. 14. In view of the cancellation provisions in the contracts of our own Government, it is past understanding that the policy at Washington should be even more lax than that of Great Britain.

If the continuance of work on useless products is prompted by the fear of temporary unemployment for a fraction of the country's workers, it is to be said that the sooner that problem is faced the better. Constructive measures will be more quickly set in motion by an actual situation than by the fear of something impending. So far as the steel industry is concerned its leaders have been generally credited with ability to apply means to an end, and it is hard to believe they would be under any delusion as to the vicious policy that has prompted recent action, or inaction, at Washington.

New Construction

The world's work for a period of years after the war will be along lines of new construction rather than reconstruction. Set phrases are sometimes used so constantly that they are employed loosely and eventually convey a wrong impression. The talk about "foreign trade after the war" has come to mean in many minds export trade rather than a combination of export and import business, which is the only combination that can be really sucessful. So with "reconstruction" the basic idea is that of reconstructing industry, commerce and finance for the uses of peace, but the widespread use of the term has caused an undue amount of emphasis to attach to the narrow interpretation of reconstruction meaning the duplication of works that were physically destroyed by warfare.

It is absurd to assume, for instance, that the chief activity will be that of building over again or duplicating towns whose very site can hardly be located with accuracy. Questions are raised as to whether even the fertility of the soil remains and it is obviously uncertain whether there will be the incentive to restore various properties to the form they had before the war. San Francisco's rebuilding after the great earthquake a dozen years ago was different. The people and the organization remained and the need that there be a city like San Francisco in precisely that location stood just as it had stood before.

The talk of "reconstruction" in its narrow sense, the duplication of buildings, bridges and such works as have been destroyed by warfare has fostered ideas that there will be a large export demand for strictly constructional material, including structural steel, fabricated or unfabricated, in particu-

lar. Even a cursory survey of prospects, however, indicates that tonnage demands along that line will be small by comparison with familiar American tonnages of structural material used at home. The normal consumption in the United States has run literally into millions of tons a year, while if the devastated area of France calls for hundreds of thousands of tons in its total, even in much more than one year, it will do well.

Export business involving steel has run largely in the past in two great categories—railroad steel and machinery. In very great measure export trade of the iron and steel making countries will be along such lines. Even in railroad material, however, prospective requirements can easily be exaggerated. It is more than 30 years ago, when the American iron and steel industry was relatively small, that the greatest mileage of new road was constructed in the country—over 12,000 miles in one year, and it is obvious that new railroad ventures likely to be undertaken in the next few years will be measured individually by hundreds rather than thousands of miles. For instance, great hopes are entertained for the development of Mesopotamia, but it is learned that only 130 miles of railroad is needed to connect the Mediterranean with the Euphrates River, and the line would involve no tunnels or heavy gradients and not much by way of bridges.

Machinery, using the term in its broadest sense, will be called for throughout the world. Machinery is a perfectly natural export, from more developed to less developed countries. First a country must develop so that it can use machinery, and then there may be a long period during which it is able to use machinery but not produce it. A country begins to use modern agricultural machinery long before it thinks of making it.

The products of the steel industry are after all very largely raw materials in the broad sense, and if there is to be much export business for the United States the exports will be quite largely of the more manufactured goods. Only in such products as wire, sheets, tin plates, etc., will there be much direct movement from the mill to the foreign buyer. A great deal of steel will pass through successive stages of manufacture before actually leaving the country. By far the major portion of the export trade will be for construction purposes, for new ventures, new employments, rather than for the restoration in the same form, of what has been destroyed by war.

Steel for Guns

The metallurgy of gun steel has been greatly altered as a result of the war. This is particularly true in this country. As the war drew to a close, steel for large guns was being made in a radically different manner from what was thought possible, even early in the war.

In both England and in this country it was accepted practice, four years ago or less, that only acid open-hearth steel could be safely incorporated in ordnance. The gun plants especially built in this country after our entrance into the war adopted this process. The reason was that it was thought possible by this process alone to make unusually pure and reliable metal. The great disadvantage involved, however, is the length of time to produce a heat of such steel. The complete deoxidation, the formation of the proper slags, and the refinement of the metal consume from 13 to 15 hours in the case of a 40 or 50 ton heat, with the utmost care necessary. As the development of the ordnance program of the United States progressed it was found that the large electric furnace, refining hot metal on a basic bottom, could and did produce gun steel equal if not superior to that made by the long-drawn-out acid open-hearth process.

While a three per cent nickel steel was the standard alloy used for many of the guns, it is known that at one of the large British plants a plain carbon electric steel was giving entire satisfaction in the last months of the war. An interesting report, also, is that at one American plant gun steel that met ordnance specifications satisfactorily was being made in basic open-hearth furnaces—a steel that was tabooed for guns before the war and later.

No doubt, had the war continued much longer, the electric furnace would have been the first choice for the production of ordnance steel. It was already so employed in the Chicago district and was scheduled for some of the later gun plants. And this was not so much because of the superiority of electric to acid open-hearth steel, but because the same amount of suitable metal can be made in about one-third the time by the former process, and in preparing for and prosecuting a war it is time as well as quality that counts.

Blast-Furnace Potash

One of the remarkable metallurgical and economic results of the war has been the production of potash salts as a by-product from sources hitherto passed by, and one country has the distinction of having developed in this way an output equal to its entire pre-war needs.

The iron blast furnace is furnishing a large part of the new supply. That blast-furnace dust contains potash salts which are recoverable in commercial quantities was discovered by an American blast furnace superintendent, W. J. Wysor. The data regarding this, published in THE IRON AGE, Jan. 18, 1917, have been the incentive of widespread investigation. In Great Britain the results have been striking. The ores there used seem to be especially adaptable to the recovery of potash and it is an interesting fact that the addition of salt to the charge has increased the output. At one plant large quantities are produced each week, and it is stated that the country's output can easily be increased to 50,000 tons a year, or enough to satisfy all demands.

An American investigator, Linn Bradley, has recently called attention to the fact that Southern iron ores, particularly those of Alabama, can be made a prolific source of potash. This was noted in THE IRON AGE, Nov. 7, 1918. And at a recent convention of the National Fertilizer Association in New York it was shown that this year's output of potash would largely exceed the 1917 output of 32,000 tons and that it would "be possible, by mobilizing all the raw material of blast furnaces

and cement mills, to reach an annual production of 500,000 tons." This is nearly twice as much as formerly came from Germany, the world's principal pre-war source. Our imports just preceding the war were over 283,000 tons.

It was Germany's boast early in the war that at the peace conference the Allies would be obliged to beg for a renewal of the old German supply and that as the war progressed the farms of America, Great Britain and France would show sad contrast to their former yields. This boast has gone the way of many another that came out of Germany; the abundant crops from increased acreages, particularly in England, are the answer. Germany has probably lost forever her foreign market for potash.

Independent Steel Products Corporation

New Export Company Forming Under the Webb Act, Representing 20,000,000 Tons of Ingot Capacity

From an interest identified with the movement, THE IRON AGE has information concerning the proposed organization of an export company to include the leading independent manufacturers of steel and a considerable number of lesser companies. With a view to forming such a company under the permission granted by the Webb act, officers of several independent companies have been in conference in the past three months. What they drew up was passed upon by legal counsel and was then submitted to other steel manufacturers. In the past few days in an informal way representatives of 28 producing companies have approved of the general plan.

The proposed export company, which will probably be known as the Independent Steel Products Corporation, will be formed by companies producing a total of nearly 20,000,000 tons of steel ingots per year. The capitalization, which has not been fully decided upon, will be subscribed by the various producers in amounts bearing a definite relation to their steel capacity. Arrangements will be made also by which producers of finished material who are not producers of ingots may carry on an export trade through the new company. It is thus the purpose to represent the greater part of the steel tonnage of the country outside of the United States Steel Corporation. It is understood that the Jones & Laughlin Steel Co., which some time ago formed its own export department, is not participating.

The handling of the export tonnage will be conducted under a group plan of organization—a rail group, structural group, bar group, wire group, etc. Thus the tonnage devoted to export by the rail group will be determined by the situation with which the rail group will deal, while the wire manufacturers, sheet manufacturers and those of other lines respectively will meet conditions in the foreign trade applicable to those lines, each trade maintaining its own standing independent of measures taken by any of the others in meeting foreign competition. The expectation is that a definite tonnage in each line will be set aside as something to be depended on for export regardless of the fluctuations in the home demand. For the most part this will represent on the average 10 per cent of the ingot production.

The plan formulated by the heads of four or five important steel companies and that has now received informal approval from others is yet to be submitted to the directors of the various companies and will also be passed upon by the Federal Trade Commission. The new company's operations will involve the purchase of steel products from the various producers. Ocean tonnage will also be provided through ownership or by the chartering of a number of vessels, depending on the decision finally reached as to Government control of shipping. The personnel of the export company has not been decided upon, but the executive committee will probably be composed of the representatives of leading companies who have evolved the plan. The board of directors will consist of not less than 15 members. Application will be made for a New York State charter and a voting trust will be created to preserve the respective stock holdings in their original proportion and to insure continuity of control. The voting trust will have a life of five years, but will be subject to renewal.

The movement is one of great moment to the steel industry and is significant of the lines on which the country's steel exports will develop. Hitherto a good deal of this trade has gone through general exporting companies. The scale of the new movement indicates that brokers and merchant interests will figure to a much less extent hereafter in the sale of American steel in foreign markets.

The plans of the new company are expected to shape up rapidly, in view of the demand already in sight for American steel both for new construction in Europe and for the needs of neutral countries which have been accumulating during the war. The plans of other countries for collective buying of iron and steel also suggest co-operative action by American steel producers.

Large Increase in Domestic Manganese Ores

WASHINGTON, Nov. 26.—War time acceleration has increased the American output of maganese ore to such an extent that the domestic mines are now able to supply one-third of our consumption—against one-sixth in 1917—according to figures compiled by D. F. Hewett of the U. S. Geological Survey.

In the first six months of 1918 the shipments of ore containing more than 35 per cent of manganese were 136,554 gross tons. In October, ore of this grade was being shipped at the rate of about 28,000 tons a month, or 336,000 tons a year. It is estimated that the last six months of the current year will record shipments of 324,000 tons. During the first six months of 1918 the shipments of ore containing 10 to 35 per cent of manganese aggregated 314,137 tons and the estimates for the whole year fix upon an aggregate of 832,806 tons.

The number of shippers of all grades of ore appears to have reached a maximum in the last quarter of 1917, as the number then reporting was 195, whereas the number reporting during the first six months of 1918 was only 190. Montana, which stood first in the production of high-grade ore in 1917, continues to lead, and its leadership appears to be secure.

Harold L. Frankle, formerly connected with the Joseph Joseph & Brothers Co., New York, in charge of its Norfolk Virginia scrap yard, has opened offices at 1051 Ellicott Square Building, Buffalo, where he will engage in a brokerage business in scrap iron and steel.

MORE FREEDOM IN EXPORTS

Many Iron and Steel Products Removed from Conservation List

WASHINGTON, Nov. 26—(*By Wire*).—The War Trade Board to-night announced the removal of approximately 700 commodities from the export conservation list, effective Nov. 27. This is the most important step taken to release American industries for the export trade. Among the items freed from export restrictions are the following:

Alloy steel; iron and steel bands; iron and steel bars, including flats 6 in. wide and narrower; bolt spikes; boiler tubes; iron and steel track bolts; oil well casing; iron and steel cable, consisting of 6 wires or more; cast iron pipe; fabricated structural material of iron and steel, including angles, channels, beams, tees and zees; plates ⅛ in. thick and heavier, punched or shaped, including tanks made of plate ⅛ in. thick and heavier; frogs and switches; high-speed steel; hooks and bands of iron and steel, including hot rolled and cold rolled strip steel; mechanical tubes; iron cut nails; steel wire nails; tie plates; iron and steel poles; iron and steel railroad spikes; rails of 50 lb. per yard and less; splice bars; sheets of iron and steel less than ¼ in. thick; iron and steel skelp; tool steel; iron and steel wire and wire rope.

Machinery; marine boilers; boring mills; railroad cars completely assembled and unassembled and parts thereof; iron and steel chain either welded, cast or stamped; drill chucks; lathe chucks; saw blades; condensers; marine engines and parts; marine fire room parts; open-hearth and blast furnaces; steel furnaces; grinders; hydraulic presses; locomotives and parts thereof; machine tools; turbines; superheaters; slotters; plate rolling mills and reamers.

The list also includes a long schedule of articles of tin and tin plate as well as Babbitt and other antifriction metals.

The board also announces the modification of the iron and steel export conservation list so that it will retain plates of sizes ¼ in. thick and heavier, and wider than 6 in., rails over 50 lb. per yard and shapes 3 in. and larger not punched nor formed, but including angles, channels, beams, tees and zees.

Material-Handling Machinery Manufacturers Organize

At a conference of committees representing material handling machinery manufacturers at the Engineers' Club, New York, Nov. 21, held for the purpose of considering ways and means for improving cargo handling at ports of the United States in conjunction with the Port and Harbor Facilities Commission of the United States Shipping Board, steps were taken to make permanent the organization of what will be known as the Committee of Material Handling Machinery Manufacturers' Associations. This new body will comprise four groups of manufacturers, represented by the following committees:

Class 1—Trucks, Tractors and Trailers: F. W. Conlin, the Conlin Truck Co., 30 Church Street, New York, chairman; [illegible] Brown, the Elwell-Parker Electric Co., 50 Church Street, New York; R. P. Kennedy, the R. & L. Baker Co., New York.

Class 2—Gravity and Power Conveyor Apparatus: B. H. Lamson, the Lamson Co., chairman, Boston, Mass.; F. E. Mathews, the Mathews Gravity Carrier Co., Elwood City, Pa.; E. [illegible] Humphrey, the Link-Belt Co., Philadelphia.

Class 3—Cranes, Hoists and Winches: J. A. Shepard, the Shepard Elec. Crane & Hoist Co., Montour Falls, N. Y.; [illegible] H. Libby, the Sprague Electric Works, Bloomfield, N. J.; [illegible] member Electric Hoist Manufacturers Association; [illegible] W. Davis, the American Hoist & Derrick Co., St. Paul, Minn.

Class 4—Elevators: R. W. Scott, the Otis Elevator Co., Thirty-ninth Street and Eleventh Avenue, New York; D. V. Jenkins, the Watson Elevator Co., 407 West Thirty-sixth Street, New York, and member Elevator Manufacturing Association of New York; O. P. Cummings, the A. B. See Elevator Co., 220 Broadway, New York, and member Elevator Manufacturers Association of the United States.

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By-Product Coke Passes Beehive

The by-product coke production of the United States on Oct. 18 passed the production of beehive coke, according to the compilation of statistics made by the United States Geological Survey. It had been estimated that if they continued the rate of growth established a few years ago the by-product ovens would attain a production equal to that of the beehive ovens in 1923; but the tremendous impetus given to retort production by the war in its demand for toluol and other by-products has caused rush work on new installations, with a consequent increase in capacity, and the lines now cross. In the week ended Nov. 2 by-product coke production was estimated at 577,000 tons and that of beehive coke at 558,000 tons.

An authority on by-product coke expresses the opinion that the product of the retort oven will hold its lead as, in his judgment, the newer ovens will run when the beehive ovens do not. He believes that mine owners who also own beehive ovens will ship their coal in many cases rather than coke it.

In THE IRON AGE of Jan. 3, 1918, the capacity for by-product coke, as of Jan. 1, was given as 26,005,400 tons, and it was estimated that the capacity of plants likely to go into operation in the course of the year was 7,795,000 tons. At the beginning of the year there was under construction for completion in 1918 a total of 1844 ovens.

Millers Bros., Marshfield, Wis., wholesale scrap iron and junk dealers, have acquired the former Hans Bille factory building and are remodeling it for warehouse and storage purposes.

First Moves Toward Reconstruction

Continued from page 1333

further restrictions will be left largely to the industry itself. In the main, it is expected that whatever conservation remains will be purely for the purpose of peace economies and a general benefit to the industry than as part of a war retrenchment, forced by necessity.

Price-Fixing Policy Undetermined

The price-fixing policy for the future has not been determined but the question of further Governmental supervision of prices will also depend largely upon the attitude of the individual industries.

Chairman Baruch of the War Industries Board announced that it was the intention of the Board to continue all maximum prices thus far established on commodities in operation through the dates originally set in the price-fixing orders. As these dates are approached the Board will consider on its merits the advisability of extending the period of price control over the respective commodities affected or removing that control. To attempt any change before the dates fixed in the original orders, he pointed out, would be to inflict hardships on those who have placed orders on the assumption that the prices would obtain for the period specified. Calling attention to the fact that the War Industries Board has centralized control over fuel and transportation, Mr. Baruch said it was still in position to enforce these maximum prices.

Concerning the pooling agreements between the United States and the Allies, Mr. Baruch stated that, as far as this country is concerned, these agreements will be closed with the signing of the peace treaties. Regarding the tin pool, the commodity had been bought for consumers and until liquidation has been completed, the rules and regulations of the pool will be continued in effect. He called attention to the fact that, under the arrangement, the Government had been able to buy tin at a price 45 cents below the market figure on the entire amount of 80,000 tons allotted to this country.

Heavy Cancellation of Government Contracts

The question of cancellation of Government contracts is, of course, the vital one. The details of the big cancellation programs of the Army and Navy have not been made public. There seems to be a feeling that the publication of the long lists of items would have a demoralizing effect. As a matter of fact, however, the announcement of the aggregate totals is in itself a staggering one. Secretary Baker wrote to Senator Martin, chairman of the Appropriations Committee, that the readjustment orders of the War Department would save $1,336,000,000. Of this the cancellation of contracts alone totals $700,000,000. By cutting out overtime and Sunday work he estimates a saving of $2,900,000 a day. In the Bureau of Aircraft Production he estimates a saving by cutting out much of the present production of $225,000,000.

The Navy totals of canceled contracts and projects run to $421,000,000. It is explained that a large share of this is merely paper construction which involves no present stoppage, because it is not begun. The itemized figures, however, are not forthcoming.

On all cancellation questions the War Industries Board has helped to find new markets for the material available for re-allocation. It is declared, however, that in many cases the industry has been able to take care of its own allocations. There the Board has not interfered.

It is possible that the detailed figures for the Army and Navy cancellations will be given to Congress when it reconvenes. For the present most of the officials concerned seem to fear that the publication of itemized lists would lead to complaints from the industries and localities which have suffered the most. The only detailed statement given out concerns the abandonment of certain important construction projects totaling a good aggregate of millions—though even here the actual amounts involved were concealed.

Present Congress Not Expected to Accomplish Anything

The interest in President Wilson's reconstruction program has been considerably diminished by the announcement that it will not be forthcoming until he proclaims it himself in Congress next week. It comes too late to affect any of the vital details of the immediate questions that the industries are now trying to solve for themselves—no planned Government aid being available. As far as legislation is concerned, there is little likelihood that the present Congress, doomed to die March 4, can accomplish anything. First, the chief motive power of Congress, the President, will be in France. Second, the Republicans look upon this legislation as their peculiar assignment, and they will see to it that it is carried over to the Sixty-sixth Congress, in which they will have a majority. Chief among the new complications that are arising is the fact that questions of foreign commerce will have the largest attention, and the coming peace conference will have something to say about general policies. There is no discounting the fact that there is a growing Congressional opposition to President Wilson and Secretary Redfield's altruistic ideas about the use of our merchant marine for the commerce of any nation in preference to our own.

W. L. C.

Priorities Except for Government Work Revoked

WASHINGTON, Nov. 26.—To hasten the restoration of normal industrial conditions, the War Industries Board has decided that there shall be no automatic priority ratings except for work under the control of the Government. The Priorities Division issued a formal cancellation of all outstanding priorities ratings, whether certificate or automatic ratings, except those for the Navy, the Emergency Fleet Corporation and the railroads, telegraph and telephone companies. The last three are now under Government control and therefore have that title to automatic preference.

It had been planned by the Priorities Division to retain a series of automatic ratings for civilian purposes, but as forecast in this correspondence last week, the War Industries Board saw a great danger in the maintenance of civilian priority. As a result it overruled the Priorities Division program.

This required a complete revision of the tentative draft of Circular No. 58, which had been made up to carry a series of such civilian preferences. This would have included an automatic A-5 rating for public utilities and a B-1 rating for farm implements, binder twine and rope, oil and natural gas wells, refineries and distributing agencies, mines, coke ovens, reduction plants, smelters and furnaces and of machinery, tools and equipment required for the production, harvesting, distribution, milling, preserving, canning and refining of foods and feeds.

The fear that the retention of such ratings might give rise to demands for an extension to other lines, as well as that it might give these industries undue power in a disturbed market, finally resulted in the recall of the original program.

The new order became effective last Friday. Chairman Baruch of the War Industries Board announced that it in no wise implies a cancellation of orders, priority directions and requests, whatever their form, having been entirely disconnected from the placing of orders, their sole purpose and function being to define the relative importance of orders when placed. Furthermore, the full force and effect of the directions prior to that date are retained and preserved for the protection and benefit of those who have respected and observed them.

Applications for priority certificates may still be made, but will be granted only when the need is urgent and where it is clearly in the public interest. Nevertheless the Priorities Division, under the new order, not only recognizes the paramount needs of the Navy, Emergency Fleet Corporation, railroads, telegraph and

telephone companies, but urges the industries of the country without resort to priority assistance to speed up the production and delivery of orders for the repairing of public utilities, manufacture of farm implements, and equipment for the production and distribution of wood, petroleum and natural gas pipelines and other utilities; and the operation, repair, maintenance or expansion of mines, coke-oven plants, ore reduction plants, smelters and furnaces employed in the production of fuels, metals and metal products.

The order further eliminates completely preference list No. 2 issued by the Priorities Division for the guidance of all Governmental agencies and others interested in the production and supply of fuel and electric energy; the supply of labor; and the supply of transportation.

The War Industries Board, however, made one important reservation. Under this the Priorities Division will have the power whenever an urgent necessity "in the public interest" demands, to promulgate "such rulings and make such suggestions and requests in connection with priorities in the production and supply of fuel, electric energy, labor and transportation as changing conditions may require."

The text of the order, which is signed by Edwin B. Parker, priorities commissioner, and approved by Bernard M. Baruch, chairman of the Board, is as follows:

War Industries Board

PRIORITIES DIVISION.

BULLETIN NO. 58, issued Nov. 26, 1918, embodying rules and regulations covering priority in production.

Superseding circular No. 4, issued July 1, 1918, and all supplements thereto. Also canceling preference list No. 2 circular No. 20.

REGULATIONS COVERING PRIORITY IN PRODUCTION

The Priorities Division of the War Industries Board recognizes the whole-hearted support accorded by the industries of the nation to the regulations governing priorities promulgated during the period of active hostilities, and expresses its full sense of appreciation for that united co-operation.

The public interest, as well as the interest of the individual industries, demands that the flow of materials, equipment, supplies, fuel, transportation and labor, which has heretofore been diverted to war industries, should now as promptly as possible, without unnecessarily disturbing the equilibrium of industry, be rediverted to its accustomed and normal channels. To that end, the War Industries Board will, so far as it consistently may, co-operate with industries, and the restrictions upon the production of peace time necessities and civilian requirements resulting from giving precedence to war production, will, as rapidly as practicable, be removed.

With this in view, the existing rules and regulations promulgated by the Priorities Division of the War Industries Board, especially those embodied in circular No. 4 and supplements 1 and 2 thereto, are modified in the following particulars:

REVOCATION OF EXISTING PRIORITY RATINGS AND EXCEPTIONS THERETO

SECTION I. Effective as of Nov. 22, 1918, all priority directions and all automatic priority ratings heretofore issued are hereby revoked, save such as have been issued

(a) Orders placed by the United States Navy Department.

(b) Orders placed by the United States Shipping Board, Emergency Fleet Corporation, and

(c) Orders placed by railroads, telegraph companies and telephone companies.

REVOCATION OF PRIORITY DOES NOT IMPLY CANCELLATION OF ORDERS

SECTION II. Emphasis is here given to the fact that priority directions and requests, whatever their form, have been entirely disconnected from the placing of orders; their sole purpose and function being to define the relative importance of orders when placed. The provisions of section I hereof, revoking the existing priority directions therein mentioned, do not in anywise operate as a cancellation of the order itself, or otherwise affect the order save to cancel the priority rating thereon as of Nov. 22, 1918. The full force and effect of the directions prior to that date are retained and preserved for the benefit and protection of all who have respected and observed them.

CANCELLATION OF RULES PROVIDING FOR AUTOMATIC RATINGS

SECTION III. Effective Nov. 22, 1918, all rules and regulations heretofore promulgated by the Priorities Division providing for automatic priority ratings are hereby revoked and canceled.

APPLICATION FOR THE ISSUANCE OF PRIORITY CERTIFICATES MAY STILL BE MADE

SECTION IV. While applications for the issuance of priority certificates may still be made to the Priorities Committee on aplication form P. C. No. 15, still such applications should be made only where the need is urgent and where it is clearly in the public interest that under the present or then existing conditions priorities should be granted. With the lessening demands for materials to be used for war purposes, the need for priority assistance will constantly grow less. It is, however, in the public interest that the filling of orders for the Navy Department of the United States, the United States Shipping Board Emergency Fleet Corporation, railroads, telegraph companies, and telephone companies, and orders hereafter placed by the War Department of the United States, be expedited as much as possible, and that all possible assistance be rendered toward stimulating the construction of railroad locomotives, and the manufacture of other railroad materials, equipment and supplies; the manufacture of telegraphic and telephonic instruments and equipment; the repairing of gas, light, water and power plants, operated as public utilities; the manufacture of marine equipment; the manufacture of farm implements, and tools, implements, machinery and equipment required for the production, harvesting, distribution, milling, preserving, canning and refining of foods and feeds; the manufacture of binder twine and rope; the production of petroleum and natural gas, and the manufacture of supplies and equipment required for the production thereof, including pipe lines, storage tanks, tank cars and refineries, and the operation, repair, maintenance, or expansion of all mines, coke oven plants, ore-reduction plants, smelters and furnaces employed in the production of fuels, metals, and metal products. The Priorities Division therefore requests the industries of the country to speed up the production and delivery of the orders for these purposes and uses to insure delivery when required without the necessity for those placing the orders requesting priority assistance.

PREFERENCE LIST NO. 2 REVOKED

SECTION V. Preference list No. 2 (circular No. 20) and all supplements and amendments thereto issued by the Priorities Division of the War Industries Board for the guidance of all Governmental agencies and others interested in (1) the production and supply of fuel and electric energy; (2) the supply of labor; and (3) the supply of transportation service by rail, water, pipe lines or otherwise, is hereby, effective Nov. 22, 1918, revoked and canceled. The Priorities Division will from time to time promulgate such rulings and make such suggestions and requests in connection with priorities in the production and supply of fuel, electric energy, labor and transportation, as changing conditions may require.

Nothing Definite Toward Settling Labor Problems

WASHINGTON, Nov. 26.—All efforts of the various Government authorities to straighten out the labor problems that are growing out of demobilization, the cancellation of war contracts and the readjustment of industry, have resulted so far in nothing that can be called definite. Even the industrial survey—for which President Wilson laid aside $300,000—has not been exactly a success, because it had to be made up by community labor boards, many of whom disbanded when the armistice was signed and have not been heard from since. They were to report every Monday the figures of employed and unemployed in their districts.

The chief blockade in the program of the Department of Labor came from the fact that the War Department has refused to follow the recommendation of the Labor Department for an industrial demobilization. Not only has the Army insisted upon a purely military demobilization, but it has speeded up the demobilization to such an extent that many communities are feeling heavily the influx of job-seeking ex-soldiers. Even if the Department of Labor could find some way of discovering positions enough to go round, there is grave doubt whether it could route these returning soldiers anywhere except to their homes.

The question of absorbing this homeward bound army into the industrial ranks without lowering wages

is not easy to solve. But even beyond this there are grave complications. Already there are strikes against the changing conditions which the end of the war has forced. Most difficult of these are the objections raised by the men to returning to the 8-hr. day. Men who have been receiving 11 hours of pay for 10 hours of work resent vigorously being put back on an 8-hr. day with eight hours' pay. Unless this is carried out, there is little prospect of an actual absorption of the new unemployed army. The wiser labor officials here feel that the workers are hurting their own cause by this battle against an 8-hr. day. For, if they do not accept the 8-hr. day when it is now offered them, the workers will presently find themselves back on a 10-hr. basis with 10 and not 11 hours' pay. They may even find that they are working 10 hours for the 8-hr. pay of the war.

The difficulty lies in the fact that the workers have in the main raised their living standards to comport with the extravagant war-time wages, and they do not want to give up those standards now, even to make room in the factories for returning soldiers. In many factories the mere abolition of overtime would make it possible to absorb an additional 40 per cent of men without disturbing the present labor lists at all.

Reports of labor conditions throughout the country are not being made public here and Washington gets little more than newspaper information concerning labor unrest. The fact that the American Federation of Labor opposed the general strike proposed in connection with the Mooney case made officials here feel easier, for that proposition contained such a dangerous element of Bolshevism that Washington was beginning to worry. Of course, even now, it is not certain that the American Federation of Labor can hold all of labor in leash, for many times that organization has found it difficult to prevent trouble.

On the other hand, the National War Labor Board has not exactly helped in the matter of stabilizing labor conditions, for it has continued to increase wages throughout the country almost as fast as it could sign the awards. Secretary McAdoo also announced that the new increases in express rates would probably be absorbed at once by increases in wages.

As Director General of the Railroads, however, Secretary McAdoo has started to cut down labor hours, and believes that by going on a 9-hr. day in the shops yesterday, and on an 8-hr. basis Dec. 9, the roads will be able to absorb the 200,000 men who left the roads for the army, without having to discharge any of the present employees.

To expedite the discharge of men needed urgently in industries, or for the relief of their own families, the War Department has issued a special order giving Army department commanders specific instructions how to proceed.

As to the great forces of war workers who are to be demobilized by the cancellation of contracts, some idea of the vast numbers involved may be gained from the announcement of the United States Employment Service that during the present year it placed 2,500,000 men in the war industries. It expects to have to find places for practically that number in demobilizing these industries.

W. L. C.

War Labor Board to Continue Until Peace Comes

WASHINGTON, Nov. 26.—The National War Labor Board has decided to continue its operations until the actual signing of the peace treaties. Whether it will go out of business at that time, or recommend that it be continued as a "peace labor board," has not yet been decided. This action was taken in response to a letter written by Secretary of Labor Wilson to former President Taft and Frank P. Walsh, joint chairmen of the board. The Board has adjourned to Dec. 3. Chairman Walsh's resignation has not been accepted. "While an armistice has been declared, we have not yet reached the status of peace, said the letter of Secretary Wilson. "That will not be reached until the President's proclamation has been issued after the peace treaties have been signed and approved by the Senate. In the meantime, many problems of production and readjustment will have to be dealt with. For these reasons it is desired that the National War Labor Board continue its activities."

Jurisdiction Over Minneapolis Steel and Machinery Case

The Board acquiesced without a protest. More than that, it immediately handed down a decision in the case of the employees of the Minneapolis Steel and Machinery Co., asserting its right to hear that contest with a vigor that promises an unrelenting adherence to power until the Board is formally dissolved by the proclamation of peace.

The decision involved a contest over jurisdiction, the company complaining that the matter should first have been heard before the State authorities, and setting up a number of other claims against the jurisdiction of the National Board. The decision of the latter, overruling the company, goes into great detail into the merits of the case. It sets up many points that will serve as precedents in future cases (the Board still having almost 400 unsettled disputes on its docket). Following are extracts from the decision:

"The complaint in this case charges the company with interfering with the rights of its employees to organize in trades unions; avers that it has discharged from its service a number of employees for joining Local No. 91 of the International Association of Machinists; charges that it pays inadequate wages, and does not give equal pay for men and women engaged in the same work; and that it does not permit its employees to bargain collectively. The defendant company has entered a plea to the jurisdiction on the following grounds:"

"1. That no controversy exists between the company and its employees such as is averred.

"2. That 90 per cent of the work of the company is done under contracts of the War Department, which themselves provide for settling labor disputes other than through this Board.

"3. That the Board in assuming jurisdiction and proceeding to adjudicate the matters set forth in the complaint would be compelling the company to deal with a labor union contrary to its policy prior to the war.

"4. That the complaint is improper, in that it is signed by certain officers of the union and not by the employees of the company.

"5. That this Board should not take jurisdiction of the matters presented in the complaint, because it is a case properly within the cognizance of the Minnesota State Board of Arbitration, which has jurisdiction under an order of the Minnesota Commission of Public Safety giving the power of compulsory arbitration in such cases as are made by the complaint.

"We do not think that this plea can be sustained. The first and third objections of the plea merely go to the merits and sufficiency of the complaint, and not to the jurisdiction of this Board over the subject matter. The fourth is a technical one as to form of the complaint. It is signed by a union, and not by the employees of the company, but the union professes to represent the employees of the company to sign for them. That does not affect the jurisdiction of the Board, and cannot be raised by such a plea. The Board has permitted very informal procedure in the past. It has now adopted rules in respect to the form of the complaint, which it will enforce in the future, but such an objection does not go to the fundamental issue of jurisdiction, and will not further be considered. If the union does not in fact represent the employees, so that the employees are not in fact complaining, that can be made to appear at a hearing on the merits, just as in the case of the first ground set up in the plea that there is no controversy. We pass, therefore, to the main issues of the case, and the only real parts of the plea that properly raise the question of jurisdiction, which are the second and fifth.

"This Board was created by the President in pur-

suance of his general executive powers under the constitution and especially those conferred upon him in his capacity as commander-in-chief of the Army and Navy, and in the injunction that he take care that the laws be faithfully executed. When the proclamation was issued constituting this Board, and when this complaint was filed, we were at war with Germany by a declaration of Congress in accordance with its constitutional powers. That war, although hostilities have been suspended by an armistice, still continues as a legal status, and will continue under the decision of the Supreme Court of the United States, until peace is declared to exist by a proclamation of the President announcing the ratifications of the treaty of peace, and proclaiming the war to be ended and a state of peace to begin. In other words, the ceasing of hostilities has no effect upon our present jurisdiction, as a matter of law.

"The purpose of the President was to stimulate maximum production of war necessities and war supplies, and to that end the President gave the Board jurisdiction to consider industrial controversies arising not only in fields where war supplies were produced or made, but also in every other business activity, obstruction in which would tend to reduce maximum production of war supplies. Now, the creation of the Board, under the lawful power of the President, is an exercise of Federal authority in respect to a purely Federal matter, to wit, war preparation. It must, therefore, be supreme in its operation, and while it should be reconciled, in every way consistent with its purpose, to State action toward the same end, where any real conflict exists State action must give way.

"This case, therefore, and all others like it, in which similar pleas are presented, will proceed in accord with the rules of the Board. The defendants will answer, if they be so advised, within four days after receiving notice of this ruling. The order will be 'that the plea to the jurisdiction having come on for hearing before the section of the Board, the section finds that the defendant company can take nothing by the plea, and it is overruled. Four days is given to the defendant to answer the averments of the complaint, if it be so advised, and after the time for answer shall have expired, whether an answer be filed or not, the secretary shall direct examiners to repair to Minneapolis and there to hear the issues on the averments of the complaints and of the answers, if they are filed.'"

General Electric Decision

In the supplemental award in favor of the employees of the General Electric Co., Schenectady, N. Y., the Board overruled the decision of an examiner and fixed the night-shift schedule at 50 hr. per week, saying:

"According to the evidence in this case, prior to the submission of this controversy to the arbitrators, the employees demanded a 44-hr. week, and subsequently this demand was altered to a request for a 48-hr. week. Inasmuch, however, as the women in this plant are at this time working only 48½ hr. per week and the men only 50 hr., the difference is so slight that we conclude, without passing on the merits of the length of the workday, not to change it at this time, because of the very great difficulty which would be involved in applying the present wage scale to these small changes of hours. The decision was based upon an understanding on the part of the arbitrators that the maximum hours for men were 50 hr. per week. The fact is that the schedule of working hours for the night shift is 55 hr. per week. The examiner appointed to interpret this award held that the purpose and effect of this paragraph was to leave the working hours in the plant unchanged. The Metal Trade Council of Schenectady appealed to the arbitrators under date of Aug. 20, 1918, against this decision of the examiner, asking for a ruling that the purpose of the arbitrators in the paragraph above quoted was to fix 50 hr. per week as the maximum working schedule.

"This was, in fact, the purpose of the arbitrators, based upon their understanding and belief that 50 hr. was the maximum working time for men and 48½ hr. was the maximum working time for women. The interpretation of the examiner is therefore overruled and the company is directed to change the working hours of the night shift to a schedule not to exceed 50 hr. per week."

In the same complaint, the Board decided that there shall be a horizontal increase of 15 per cent in the wages paid all classes of male clerical workers at the date of filing the complaint in this case, and 20 per cent increase in the wages paid all classes of female clerical workers at the date of filing the complaint in this case, provided, however, that each adult female worker 18 years of age or over shall receive a minimum wage of at least $16.50 a week; that the minimum wage of adult men workers 21 years of age or over shall be not less than $22.50 a week. The 10 per cent granted by the company as of July 31, 1918, to be used as an offset and deducted from the increase herein awarded.

Corn Products Decision

In a long decision involving the complicated working organization of the Corn Products Refining Co. the Board laid down an interesting series of rules which it probably will apply to future cases of the same kind:

Employees attending union conventions or other duties affecting themselves shall, upon giving proper notice to the foreman or superintendent, be permitted to absent themselves without pay to attend to such duties. Upon their return such workers shall be reinstated into the service with all their former rights.

No employee shall be suspended, demoted or dismissed because of trade-union membership or for legitimate trade-union activity.

In the event of its becoming necessary to decrease the force by a layoff, seniority shall be given preference. The principle of seniority shall generally prevail as to all employees in their respective departments.

No employees shall be suspended, demoted or dismissed without just and sufficient cause. If, after proper investigation, it is found that an employee has been disciplined unjustly, he shall be reinstated with all rights and full compensation for all time lost.

There shall be no discrimination against any employee or prospective employee because of creed, color or nationality.

Employment shall be accepted proof of general competency. Statement of specific incompetency must be given a dismissed employee upon demand of himself or representative.

Employees shall not be required to join company benefit or welfare associations.

Pittsfield Machine & Tool Decision

The Board announced the following award in the case of the employees of the Pittsfield Machine & Tool Co., Pittsfield, Mass.:

The wages to be paid the employees in the Pittsfield Machine & Tool Co. shall be the same rate of wages paid by the General Electric Co. of Pittsfield, to its employees in similar occupations.

There shall be elected forthwith a representative shop committee in conformity with the plan approved by the Board.

An administrator, preferably Mr. Stoddard, shall be detailed to ascertain the rates of wages that should be paid under this award and assist in applying these rates to the employees of the Pittsfield Machine & Tool Co. The administrator, in conference with the officials of the company and the employees, shall determine the size and membership of the shop committee, and shall supervise the first election thereof.

This award shall be effective as of Sept. 3, 1918, and shall continue for the duration of the war, except that either party may reopen the case at periods of six months interval, beginning Feb. 1, 1919, for such adjustments as changed conditions may render necessary. The company shall be allowed until Dec. 15, 1918, to make payments of any back pay due its employees under this award.

Continues a General Wage Increase Policy

Despite the cessation of hostilities, the War Labor Board continued a general wage increase policy. In practically every case it acceded to the demands of the men.

In granting the demand of the employees of the American Locomotive Co. for a basic 8-hr. day, the

Board declared that the hearings before its examiner revealed the fact that the employees preferred a Saturday half holiday. It therefore changed the decision from a "basic 8-hr. day" to a "48-hr. week," and decided that the actual number of hours to be worked each day should be left in the hands of the company and a committee representing the employees.

The coal dock operators at Duluth, Minn., and Superior, Wis., were ordered to pay their electrical workers for an 8-hr. day, the daily wage rate they had paid for 10-hr. work on Oct. 1. The Board added this qualification:

Inasmuch as the selling price of the product of the coal dock operators is controlled by the Fuel Administration, and is based upon ascertained cost of operation, including wages, this award is made contingent on the action of the Fuel Administration making such readjustment in the selling price as may be warranted by reason of the increased cost of operation entailed by this award.

In granting the $6 a week increase demanded by the New York pressmen, Joint Chairman Frank P. Walsh, of the War Labor Board, added this comment:

Exhaustive investigations by the staff of the National War Labor Board have demonstrated that 72½ cents an hour, or $34.80 a week for 48-hr. work, is necessary to support a family in health and reasonable comfort. Any wage less than this is penalizing the worker's family for the benefit of the employer or the general public.

The board also ordered increases in the wages of the coopers employed by the Sinclair Refining Co., Coffeyville, Kan., and the employees of a number of public utility companies.

The Board referred the following disputes to the umpires named:

Judge Julian W. Mack, Chicago: Iron molders versus Ætna Foundry & Machinery Co., Warren, Ohio; iron molders versus foundry owners of Elizabeth, N. J.

Matthew Hale, Boston: Machinists versus Worthington Pump & Machinery Co., Cudahy, Wis.

John Lind, St. Paul, Minn.: Machinists versus Niles-Bement-Pond Co. Plainfield, N. J.

Central Western Manufacturers Going to Peace Basis

PITTSBURGH, Nov. 25—In reply to inquiries sent to manufacturers in various metal-working lines, the following statements have been made for publication as to conditions affecting the transition of such industries from a war to a peace basis.

Wheeling Steel Casting Co., Wheeling, W. Va.: "During the war period we have kept our foundry going making steel castings, nearly all of which were for repairs in plants doing war work or new projects covered by Government priority orders. In addition to this we have been making projectile steel and forging ingots, the latter being for Emergency Fleet work. We are going back into our former line, making steel castings and putting our surplus steel into forging ingots. About 80 per cent of our equipment will be available for use in our resumption of commercial work."

McCrosky Reamer Co., Meadville, Pa.: "We have been manufacturing our standard line of tools almost exclusively throughout the war period. It just happened that our line of machine-shop production tools fitted in perfectly with the war program and we were given the same classification as machine-tool builders or other makers of necessary machine-shop equipment, namely, Class A-6. We did accept one or two orders for special shell-boring cutters, but that did not interfere seriously with our regular production. This all means that there will be no change in the nature of our work and that all of our present equipment can be applied to our business under peace conditions as during the war period. We have increased our equipment sufficiently during the war period to add possibly 50 per cent to our output, as compared with the pre-war period."

Phoenix Iron Works Co., Meadville, Pa.: "For some time our output has practically been 100 per cent fabricated plates and gray-iron castings for ship construction. It is the intention of the company to resume our regular line of manufactured products at the expiration of our present contracts, which will not necessitate any changes in our present equipment."

Thomas Spacing Machine Co., Pittsburgh, Pa.: "We have been building right along our regular line of work, but our machines, instead of going to the structural iron people, steel-car makers, etc., were shipped principally, in fact about 80 per cent, to the shipyards. The remaining 20 per cent was furnished to our customers engaged in ship work. We contemplate making no plant changes except possibly further additions to take care of our regular line of work, as we are going after all the business that we can get in that line. We are noticing quite a new order in the state of things. We are now getting small repair orders for our machines from customers all through the country; that is, from car builders, structural plants, boiler plants, etc. This indicates that they are resuming operations in their regular line, or else getting their plants in shape for such business. Repair orders having been dormant for almost two years, we consider their reappearance quite significant."

Bessemer Gas Engine Co., Grove City, Pa.: "The Government has been taking from us oil engines, some for installation in France, others for the American camps and cantonments. Of six engines, averaging 150 hp., on order at the time the armistice was signed, only one has been held up and none canceled. In addition to this—our regular product—we were working on gun carriages, of 75 and 155 mm. We procured no special machinery to accomplish this work, our equipment being adapted to it. This same machinery can immediately be applied to our regular products, gas and oil engines. We do not contemplate entering any new lines. Our product being quite essential during the progress of the war, a large part of it going into the American oil and gas fields, we have kept regularly at our own line of work, with the exception of the gun-carriage machining. We can report business conditions better than we had anticipated they would be when peace came."

Savage Arms Corporation, New York: "We have been manufacturing in our three plants located at Utica, N. Y., Sharon, Pa., and Philadelphia, machine guns and guns of larger caliber, up to 3 in., also mounts for naval guns and a large quantity of frames for what are known as class B trucks, all for the Government. There is a considerable part of our equipment which has been purchased especially for the manufacture of war products and which cannot be used to advantage in the immediate future. A quantity of sporting arms, consisting of Savage sporting rifles, pistols and shot guns, is already being placed in production, for which there will undoubtedly be a large demand, and we are also starting work on other commercial orders which have been held up for some time due to inability to obtain sufficient labor to produce them. We are inclined to believe that the departments at Washington will give sufficent time to allow us to turn our organization to peace work."

Oliver Iron & Steel Co., Pittsburgh: "This company made drop forgings, bolts, nuts, rivets, pole line and wagon hardware, for the use of the Army and Navy. We intend to resume our old line of work, for which our equipment, old and new, will be serviceable."

Erie Steel Construction Co., Erie, Pa.: "The work we have been doing for the direct assistance of the Government in its bringing to a successful conclusion the war in Europe has been the building of electric traveling cranes as well as supplying steel frames for factories and other buildings. Both of these items are in our regular line of work and, therefore, all of the additional equipment we have installed will be so used. Our production is perhaps 50 per cent over the

pre-war period, and just at the present time we do not expect to enter any new field of manufacture although there is one being opened for us to enter if we wish, but for the present we are awaiting developments."

Morris & Bailey Steel Co., Pittsburgh: "We have been working our plant 100 per cent on war needs, which consisted of steel for airplanes, trucks, machine-gun parts, rifle parts, cartridge clips, magazines, booster cases, etc. In normal time our material goes into the manufacture of automobiles, bicycles, hardware, typewriters, sewing machines, phonographs, etc., and we do not expect to lose any time through changed conditions because those in our regular trade are again starting to place business with us."

Simonds Mfg. Co., Pittsburgh: "In the operation of our plant during the war period we did not divert from our regular line, and have been confining ourselves exclusively to the manufacture of cut gears of all kinds. We do not contemplate an addition of any new line or change to any other line at this time."

S. Severance Mfg. Co., Glassport, Pa.: "As yet we have not felt the change to peace conditions, and have received no cancellations. We have been making rivets for the various shipyards working on Emergency Fleet vessels, as well as rivets for locomotives, railroad construction and repairs, and all lines of boiler and structural work that have been classed as essential to the prosecution of the war. We do not contemplate any change in our line, but expect to continue to sell to the shipyards, believing that the Emergency Fleet operations will continue for some time. Our old customers will undoubtedly begin to come into the market as soon as they can get material which has been denied them during the prosecution of the war. We are looking forward to a considerable development in our export business, and we have on our books a large tonnage for export that we have been unable to ship during the war regulations. We hope for and expect an easy transition from war to peace conditions."

McInnes Steel Co., Ltd., Corry, Pa.: "We have been manufacturing our full line of crucible tool steels which have been used in war work; therefore, our present equipment will be all in use in peace work. As we are manufacturers of crucible steels we have not had to make any definite changes in taking on our war work."

American Roller Bearing Co., Pittsburgh: "For over a year we have supplied a large number of bearings for use in connection with war work. We have furnished bearings for every conceivable purpose, and practically all of them of our standard design, necessitating no radical changes in our manufacturing equipment. We expect to continue production of our standard product, although it will be along a much larger scale than before the war, and for which practically all of our equipment will be serviceable. Our production will be 100 per cent greater than before the war. We do not contemplate any new lines in the immediate future. Development along our line made great progress during the war; new problems in engineering were developed, and we were called upon to produce bearings in larger sizes and in greater capacities than was ever considered practical."

Homestead Valve Mfg. Co., Pittsburgh: "Although we had a great deal of Government business, either directly or indirectly, we at no time changed our standard line, and it will therefore not be necessary for us to make any changes in this respect to place ourselves on a peace basis. We are, of course, receiving some cancellations, but nothing up to date to affect our business to any extent. Orders, since the declaration of peace, have been up to the average."

Bay City Forge Co., Erie, Pa.: "The work we have been doing in connection with the carrying on of the war has been somewhat varied, in that we have been making 3-in. high angle guns and a few of the famous French 75s. These we have been furnishing rough machined, rough bored and heat treated. We have also made a great quantity of transmission forging for trench locomotives. We are now making a great number of forgings for engines to be used by the Emergency Fleet. We do not anticipate any great difficulty in transition from one period to the other, as our Emergency Fleet work will carry over, and as soon as the other industries begin to get on a commercial basis they will need forgings for their commercial work as well as for their war work."

Marion Machine, Foundry & Supply Co., Scottdale, Pa.: "We have not handled a great amount of direct war work. Our standard line of manufacture consists chiefly of coal-handling machinery and equipment, which was considered about as essential as war materials, and the war work which we handled was of such small percentage that it did not greatly interfere with our standard line of manufacture and there are no radical changes to be made in our plant."

A pipe company: "We manufactured nothing special during the war period. Our production of pipe was materially reduced, but what we manufactured went altogether for direct and indirect Government requirements. Not having converted our plant to manufacture other war materials, we never left our old line of work."

A company making boilers: "We have been building marine water-tube boilers for the Emergency Fleet; fabricated 4000 tons of plate for the Submarine Boat Corporation, and also built a number of triple expansion marine engines for the Emergency Fleet. We shall probably return to our regular line of work. We have not definitely decided whether we will take on any new lines, but if we do it will be the manufacture of water-tube boilers for marine service, and possibly large marine engines for which we now have the patterns. For the last 12 months 90 per cent of the capacity of our boiler shop has been engaged on Government work and for the last four months our machine shop has been practically 100 per cent Government work."

Fort Pitt Malleable Iron Co., Pittsburgh: "Our position is a peculiar one. We make a specialty of manufacturing malleable-iron castings for railroad equipment. Under the rules of the War Industries Board this was regarded as of a war nature. Now that peace comes, and continuing on the same line, we will be manufacturing what was known previously as non-essential. It is our intention to continue the manufacture of the same class we have done during the past 20 years."

A manufacturer of cold drawn, milled and ground specialties: "We have been making the following lines which were used particularly on war work: Finished crankshafts for Liberty airplane motors, cold drawn steel for shells, shell parts, hand gas grenades and various airplane parts; rack for gun and shell lathes, machine keys and other machine parts used in practically all classes of machine tools, engines and general machinery construction; foundry pattern plates used in molding machines for a wide variety of castings; steel engraving plates used by the Bureau of Engraving & Printing. We contemplate going back to our old line of work, as our equipment is all of a standard nature and our product as listed above will be noted as a standard one in the production of automobiles, trucks, machine tools and other work of a commercial nature. We expect to broaden our line of cold drawn steel work by introducing a high grade material with a special finish used for the most accurate machine parts and develop a line of alloy cold drawn steels that is being demanded by the manufacturers of automobiles, trucks, etc., the development of which has largely been due to the high standards of aircraft and motor construction in the war emergency."

Mathews Gravity Carrier Co., Ellwood City, Pa.: "We are going to continue to buy what we need in the way of raw materials and we are going to continue our efforts to sell all we can of our products regardless of prices. The war has had no effect on our business whatever, except to swell our volume of sales to practically double what it was previous to 1917. We have not altered our product in any particular, as the equipment we manufacture fitted nicely into the requirements of our Government and all of those industries which shifted to war work. We, of course, had to increase

our factory area and add to our mechanical facilities in order to handle the larger volume of business. Our present problem is, How are we going to keep up the volume so that our full capacity may be utilized? We have given some thought to export business but have not reached any definite conclusion."

Modern Tool Co., Erie, Pa.: "Notwithstanding we have been 95 per cent on war work for more than a year, we have never undertaken any work other than the manufacture of our standard line of precision threading tools, cylindrical grinder machines and quick change drill chucks. On this account our problems are simple, as we will continue the use of our entire present equipment with the exception of such machines as have become inefficient on account of use and abuse incident to operating with indifferent help 24 hr. a day for more than two years. These will be replaced as conditions warrant. The prospects of a satisfactory volume of business, both domestic and foreign, are very encouraging, and we have already booked some nice orders for post-war business. Since the war began we have increased our facilities so that our possible production in one 9-hr. shift is more than double that of the pre-war period, and it is our expectation to operate 100 per cent on this basis."

Tyler Tube & Pipe Co., Washington, Pa.: "Our product is exclusively knobbled charcoal-iron boiler tubes, for which there has been a sufficient demand by the different war agencies to warrant our continuing in that business during the period of the war. We are now in position to continue our regular business after the war the same as before and during it."

Franklin Steel Works, Franklin, Pa.: "We are engaged chiefly in the production of steel bars for concrete reinforcement, but also produce angles and other shapes for agricultural implements, as well as bars and shapes for brake beam work. The greater proportion of our reinforcing business has for some time been for direct or indirect Government work, and this class of business, with the brake beam business, which latterly has been considered as direct Government work, has made up about 70 per cent of our output. The balance has been applied on strictly essential work. Changing our plant from a war to a peace basis will not seriously interrupt our operations. Our facilities were not increased for war work and consequently we will have no surplus capacity that will necessitate our considering going into any new line."

Raymond Mfg. Co., Corry, Pa.: "We have been manufacturing springs only, which is our regular product. Our output has been about one-third for the Government and the remainder for our regular customers, who have been working almost entirely on essential products. In view of this we are in first-class position in regard to the reconstruction and changes which take place in returning to a peace basis. Some direct Government orders are being canceled, but this will merely give us an opportunity to get more nearly up to date on the large volume of commercial work which we have booked."

J. E. Moss Iron Works, Wheeling, W. Va.: "While our plant has been operating on strictly war material, it was on work not different from that done before the war, consisting of structural steel work for munition plants, coal mine operators, railroad work, Navy Department work, etc. It is our intention to continue along this line except that we expect the uses of our material to be confined to more of a commercial nature. It will not, therefore, be necessary for us to change our machinery or equipment in any manner."

La Belle Iron Works, Steubenville, Ohio: "We will return as quickly as we can to the manufacture of the same class of products as were on our list prior to the war, and presume that our tonnage will be slightly in excess of what it was during the war, on account of the absence of arbitrary discards and rigid specifications. The war did not bring about much of a change in our equipment, we simply using special rolls for rounds, which will not be of service in time of peace. Our production, both pig iron and steel, has not been increased, so in this respect our rating should be the same as formerly. What we want to do is to make the same class of material as we did prior to the war, and hope there will be a demand for it."

Apollo Steel Co., Apollo, Pa.: "During the period of the war this company has been supplying sheet steel, our only product, to numerous Government departments for cantonment buildings, airplane hangars, munition and supply storehouses, lifeboats, submarine chasers, etc. Our entire production was taken over for a considerable period for direct or indirect war purposes. We shall now resume manufacture for and shipments to our regular line of customers; from most of them we still have unfilled tonnage on our books. We shall also proceed in hurrying to completion an addition to our plant, which was held up during the war period. We expect to have this new equipment in operation early the coming year, thus increasing present productive capacity approximately 40 per cent. The demand for sheet steel for commercial purposes, both for export and domestic consumption, is exceedingly great, and in our opinion this branch of the industry will enjoy an extended period of good business."

Williams Leard Co., New Brighton, Pa.: "For some time our products have been from 75 to 95 per cent priority and essential work. We have made connecting rods for the engines for submarine chasers for the United States Government and for the French Government; connecting rods and crankshafts for auxiliary engines for Emergency Fleet boats; connecting rods and crankshafts for deck hoists, locomotive cranes, hoisting engines, etc.; machine keys for gun mounts, hydraulic presses, rolling-mill machine manufacturers, etc. As all came in our regular line, we are hoping to continue our present production on commercial lines and can therefore, use all of our present equipment. The installation of new equipment, however, has more than doubled our production."

Pittsburgh Machine Tool Co., Braddock, Pa.: "During the war we have been manufacturing our standard line of engine lathes, which have been greatly improved in the last year. During the war we bought a few new tools, but they were in a measure replacements and we did not increase our capacity to any extent. We expect to build our regular line, now that peace has come and we also expect a great demand as soon as the readjustment period is over. We also expect to receive a large amount of foreign business which we never had before."

Growing Disposition in Chicago to Adjust Contracts

CHICAGO, Nov 23.—The past week has brought little change to the machine-tool situation, except that the aggregate of cancellations is greater, although it is true that there is a more pronounced tendency to determine adjustment policies, both on the part of Government agencies and the sellers of machines. On no side is there as yet any clearly formulated plan of settlement, and dealers, especially, are faced by a vast amount of disturbing uncertainty.

Where an approach has been made to settlement it has been by handling each case individually, and in these instances standard machines only have been concerned, the disposition on the part of both dealers and builders of special machinery used in the manufacture of war equipment being to accept no cancellations. Such machines, it is apparent, may not be called for again for many years, perhaps never.

Government Grappling with the Problem

A great deal is up to Washington. Local evidence that the Government is making progress in grappling with the problem lies in calls which dealers have received from representatives of the Ordnance Department, the visitors wanting details of the status of machine tools under order, the losses which would follow their cancellation, etc. Innumerable questions

arise as soon as compensation is discussed, and, with the best that can be done, there are going to be some losses or, at least, money tied up for a considerable period.

In one instance a dealer reached an understanding with a customer by agreeing to cancel delivery on some standard machines, the buyer agreeing to take others to use in his regular business. The biggest problem for the dealer exists where his principal refuses to accept a cancellation, the only alternative for the dealer being to place the machines, when the buyer will not accept them, in stock, a somewhat perilous procedure in view of doubt as to what the course of prices will be in the future.

A local company, whose plans to make shells were nipped in the bud just as its plant was in readiness to begin operations, has offered to resell to the seller some of the machinery it purchased, giving the seller the option of buying back at 25 per cent less than was paid, an offer which the seller could not see his way to accept, in view of the fact that tool prices have quite generally advanced 100 per cent or more since pre-war times. Already considerable machinery bought for munitions manufacture is being offered in this territory, though not to the same extent as elsewhere. A Canadian company sent its offer to Chicago by telegraph. In a few instances machines are offered for sale which have not been removed from crates.

Expect Claim Boards to Be Created

The trade has gathered the impression that, when adjustments are made, it will be through the medium of claim boards which will sit in various centers and pass on the claims submitted. No allowance will be made, of course, on prospective profits. Inasmuch as compensation is based on the clause which exists in the contract between the Government and the munitions maker, the general view is that the tool builder and the dealer, if one is involved, must be compensated, if he has suffered, by the contractor, but another view is that the contractor should merely cancel and the Government deal directly with the tool builder or seller.

Builders of tools continue to have divergent views as to how the situation should be handled, this being indicated in their communications to their agents. The problem of how to regulate their working forces confronts the builders when they are told to suspend operations on canceled tools. A readjustment cannot be made in this respect in a night.

The situation is not by any means altogether a doleful one, especially in the Chicago territory. The *Economist*, of Chicago, points this out as follows:

> Many of her most enterprising citizens held that Chicago lacked diligence in getting war contracts. It was falling behind the procession, they said. By the same token, the cancellation of huge war orders, running into billions of dollars, will not affect this city, but will seriously interfere with the progress of others cities, the growth of which has been phenomenal in the past two or three years. Chicago is just as much ahead as it was thought to be delinquent some time ago. It is, however, in bad taste to boast when it is at the expense of some other enterprising city, particularly when they have all contributed so much to bringing the war to a close.

Some Encouraging Developments

A large Chicago manufacturing company which has a plant in Belgium contemplates sending there an important part of its Chicago equipment and then replacing this with tools it will purchase. It is awaiting a report from abroad, meanwhile making inquiry for the tools it has in view. A maker of high-grade lathes has had some of its canceled orders reinstated. Adapter work is going on full tilt, except for night work, and the makers believe they will be allowed to continue until the first of the year. A Kenosha firm is shipping a carload a day. The Winslow Brothers Co. continues to make shells. Meanwhile a few stray orders for miscellaneous machines are being booked.

The firm of Frank D. Chase, Inc., industrial engineer, Chicago, expresses itself optimistically as to the future, and in substantiation of its attitude is giving publicity to the following extracts from letters from at home and abroad. Some of them follow:

From Saint-Ouen, France: "We are from the invaded country, and are already studying the building of a large stove foundry to be built in Ardennes as soon as, with America's great effort and sacrifice, we regain that country."

From Stockport, England: "I am open to start a new factory in Belgium after the war, and am, therefore, interested in plants pushed through in the shortest possible time."

From Genoa, Italy: "We beg to forward to you data regarding a 2000-ton monthly production steel foundry, for which we will be pleased to have your proposition."

From Illinois, U. S.: "We are figuring on erecting a new foundry after the war and when conditions are right. In the meantime, we wish to perfect our plans so that we can go ahead with preparations as soon as conditions permit."

Reconstruction and Chicago Industries

The following analysis of war industry and reconstruction adjustments, especially as manufacturers in the vicinity of Chicago are concerned, is made by L. A. Dumond, manager Civic Industrial Department, Chicago Association of Commerce:

"Will the transition of industry from a war to a peace basis present conditions involving social and economic losses, is a question every manufacturer is now asking. Voluntary agencies all over the Nation are busy planning ways and means of handling the various phases of the problem as they are expected to affect particular localities. But what the manufacturer would most like to see is some definite Government policy with respect to reconstruction and an official body given the necessary authority to enforce such policy.

"In the absence of definite plans covering industries, the returning soldier, and the many problems connected with both, only general observations can be given concerning the local situation. In considering the readjustment to peace production so far as it applies to Chicago, one radical difference should be noted between the situation here and in Eastern manufacturing centers. It will be recalled that long before the United States entered the war Eastern manufacturers had secured contracts of considerable proportions for the Allied Governments. In the meantime, Chicago manufacturers took full advantage of the opportunities which were thus offered of securing a greater proportion of the country's peace business. It was but natural that after our Government entered the war these Eastern manufacturers, who had always supplied the greater proportion of Government requirements in peace time and who in addition had built organizations to produce war requirements for the Allies, should be favored with large contracts from our own Government. Chicago manufacturers were admittedly slow in seeking Government contracts, so that at the end of the first year of our participation in the war it was estimated that 85 per cent of the business had been placed with Eastern manufacturers. While at the time this fact gave rise to some dissatisfaction among the industries of the Middle West, it is possible to see now that the situation may prove a blessing in disguise.

Manufacturers in the Chicago district thus began work for the Government at a time when Eastern plants had been largely filled with war orders, but more important when those orders which required radical changes of equipment and readjustment of organizations had been placed. Chicago manufacturers in seeking Government work were therefore in a position to be conservative. They were in a position to select that character of work which readily fitted into their plants, utilizing the existing equipment, or with possible addi-

(*Continued on page* 1362)

Iron and Steel Markets

EXPORT DEMAND A FACTOR

Buying at Home and Abroad Is for Filling In

Government Allocations at an End—No Definite Trend in Prices

New inquiry and particularly that representing export demand from many sources has given a new turn to steel trade sentiment this week, after a fortnight of absorption in cancellations.

Generally producers have been stiffening against cancellations unless directly due to Government action and they have now been aided in this stand by the appearance of an unexpected number of filling-in orders and by the fact that outside of the scrap trade prices have been maintained thus far.

There is little disposition to overrate the buying, as it is generally recognized as limited to the meeting of necessities which only war could have pushed aside, and is, therefore, not likely to develop into a movement that will reinforce prices.

So far as the export buying is concerned the considerable range in prices paid and the lack of large tonnage show that in the sudden return of a comparatively free market consumers no more than buyers have as yet any definite plans. Export plates have sold at 3.50c. per lb., or 0.25c. above the Government price, in a 2000-ton transaction, and 4c. was paid in another case, while a 250-ton sale was made at 6c.

What will come of the 200,000 tons of plates for Japan, much of it at 8c., on which deliveries were not permitted by the War Trade Board, has not been decided, but the buyers expect a revision of the price in view of the idleness of their shipyards in the interval.

The Steel Section of the War Industries Board has notified all steel manufacturers that it will discontinue allocation of steel on Nov. 30 and thereafter dealings will be directly between Government and other purchasing agents and the manufacturers. A conference at Washington Dec. 11, between the manufacturers and the Price Fixing Committee may result in extending official prices, with or without change, for another three months, but there is a growing feeling in favor of an early return of the industry to a free basis.

The action of one railroad in seeking legal release from an assignment to it of cars bought at high prices by the Railroad Administration and the possibility of like steps in other cases bring in question the whole price structure. So far as agricultural bars are concerned, the $5 concession made several months ago may yet turn out to the advantage of the mills, since the contracts are firm and were in line with definite prices for implements and for the farmers' wheat.

The plans of leading independent steel interests for the formation of an export company under the Webb act are rapidly taking shape. Already 28 companies representing an ingot production of 20,000,000 tons a year have given informal approval and a New York charter will soon be secured for the Independent Steel Products Corporation, taking in a very large part of the capacity outside the Steel Corporation. A marked reduction in the amount of steel exported through merchant firms and brokers will result from the new organization. The co-operating companies plan to devote about 10 per cent of their output to export trade regardless of fluctuations in domestic demand.

Advices from England are that while many iron and steel orders of the Government have been canceled and others reduced, a large reserve of peace work is on the books of the mills. It is planned to release steel from control and to fix temporarily new maximum prices, presumably higher than in war time. New export prices already announced include £16 10s for ship plates, £16 2s 6d for shapes and £15 10s for standard rails, representing considerable advances over prevailing prices on this side.

Nothing definite has developed concerning the large amounts of pig iron and steel said to be required for Europe. The need is not immediate and the supply of ships is problematical.

Automobile manufacturers are pressing for early deliveries of sheets and other forms of steel, some of them expecting to resume the manufacture of pleasure cars on a large scale by Jan. 1. Their orders for alloy steels will partly occupy some electric furnace capacity that has been devoted to steel for guns.

The leading interest has not been soliciting business and that policy may continue until it is definitely known how long some of its important plants will be kept on Government work. Thus far it has not been able to give its sheet mills more than a 50 per cent supply of sheet bars.

The Steel Section at Washington has refused to interfere in cases where Government allocations of pig iron have become contracts between buyer and seller and the former now seeks to cancel. Where the transaction was not completed the Steel Section will now withdraw the allocation if either party desires this. Sellers generally are resisting cancellations, but each case is being handled on its merits.

In both pig iron and finished material neither buyer nor seller is making commitments for the future. Some pig iron inquiry has come out for the first half, and the last prevailing Government price is talked of as the basis. The continued cutting down of coke supply by influenza is limiting pig iron output and this will tend to hold prices. Weakness in old material ordinarily affects pig iron, but has not done so as yet.

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	Nov. 26, 1918	Nov. 19, 1918	Oct. 29, 1918	Nov. 28, 1917
No. X, Philadelphia	$39.15	$39.15	$38.85	$34.25
No. Valley furnace	34.00	34.00	34.00	33.00
No. Southern, Cincinnati	37.60	37.60	37.60	35.90
No. Birmingham, Ala.	34.00	34.00	34.00	33.00
No. Furnace, Chicago*	34.00	34.00	34.00	33.00
No. Jodiv., eastern Pa.	36.90	36.90	36.60	33.75
No. Valley furnace	33.00	33.00	33.00	33.00
Bessemer, Pittsburgh	36.60	36.60	36.60	37.25
Malleable Bess., Chicago*	34.50	34.50	34.50	33.50
Standard Valley	34.50	34.50	34.50	33.50
Basic, Pittsburgh	34.40	34.40	34.40	32.75
No. Charcoal, Chicago	38.85	38.85	38.85	37.50
Billets, Etc., Per Gross Ton:				
Bessemer rails, heavy, at mill	55.00	55.00	55.00	....
Open-hearth rails, heavy, at mill	57.00	57.00	57.00	....
Rerolling billets, Pittsburgh	47.50	47.50	47.50	47.50
Forging billets, Pittsburgh	47.50	47.50	47.50	47.50
Open-hearth bars, P'gh.	51.00	51.00	51.00	51.00
Fence wire billets, base, P'gh.	60.00	60.00	60.00	60.00
Wire rods, Philadelphia	51.50	51.50	51.30	47.50
Wire rods, Pittsburgh	57.00	57.00	57.00	57.00
Finished Iron and Steel, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	3.745	3.745	3.73	3.685
Iron bars, Pittsburgh	3.50	3.50	3.50	3.50
Iron bars, Chicago	3.50	3.50	3.50	3.50
Steel bars, Pittsburgh	2.90	2.90	2.90	2.90
Steel bars, New York	3.17	3.17	3.145	3.095
Tank plates, Pittsburgh	3.25	3.25	3.25	3.25
Tank plates, New York	3.52	3.52	3.495	3.445
Beams, etc., Pittsburgh	3.00	3.00	3.00	3.00
Beams, etc., New York	3.27	3.27	3.245	3.195
Steel grooved steel, P'gh.	2.90	2.90	2.90	2.90
Sheared steel, P'gh.	3.25	3.25	3.25	3.25
Steel hoops, Pittsburgh	3.50	3.50	3.50	3.50

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.

Sheets, Nails and Wire, Per Lb. to Large Buyers:	Nov. 26, 1918 Cents	Nov. 19, 1918 Cents	Oct. 29, 1918 Cents	Nov. 28, 1917 Cents
Sheets, black, No. 28, P'gh.	5.00	5.00	5.00	5.00
Sheets, galv., No. 28, P'gh.	6.25	6.25	6.25	6.25
Wire nails, Pittsburgh	3.50	3.50	3.50	3.50
Cut nails, Pittsburgh	5.00	5.00	5.00	....
Fence wire, base, P'gh.	3.25	3.25	3.25	3.25
Barb wire, galv., P'gh.	4.35	4.35	4.35	4.35
Old Material, Per Gross Ton:				
Carwheels, Chicago	$29.00	$29.00	$29.00	$30.00
Carwheels, Philadelphia	29.00	29.00	29.00	33.00
Heavy steel scrap, P'gh.	28.50	29.00	29.00	30.00
Heavy steel scrap, Phila.	27.00	28.00	29.00	27.00
Heavy steel scrap, Ch'go.	27.00	29.00	29.00	28.00
No. 1 cast, Pittsburgh	29.00	29.00	29.00	28.00
No. 1 cast, Philadelphia	29.00	29.00	29.00	31.00
No. 1 cast, Ch'go, net ton	27.00	29.25	30.36	23.50
No. 1 RR. wrot., Phila.	34.00	34.00	34.00	35.00
No. 1 RR. wrot., Ch'go, net	28.00	27.00	30.36	31.00
Coke, Connellsville, Per Net Ton at Oven:				
Furnace coke, prompt	$6.00	$6.00	$6.00	$6.00
Furnace coke, future	6.00	6.00	6.00	6.00
Foundry coke, prompt	7.00	7.00	7.00	7.00
Foundry coke, future	7.00	7.00	7.00	7.00
Metals, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York	26.00	26.00	26.00	23.50
Electrolytic copper, N. Y.	26.00	26.00	26.00	23.50
Spelter, St. Louis	8.20	8.15	8.65	7.75
Spelter, New York	8.65	8.50	8.90	8.00
Lead, St. Louis	7.75	7.75	7.75	6.37½
Lead, New York	8.05	8.05	8.05	6.50
Tin, New York	74.00	75.00	76.00	80.03
Antimony (Asiatic), N. Y.	8.50	8.00	12.75	14.00
Tin plate, 100-lb. box, P'gh.	$7.75	$7.75	$7.75	$7.75

Pittsburgh

PITTSBURGH, Nov. 26—(*By wire*).

The Pittsburgh steel industry is progressing rather slowly toward a peace basis notwithstanding the removal of practically all restrictions and priorities by the Government. There have been further cancellations of war steel, especially for shells, but such cancellations are mainly of business for forward delivery, and there has been almost no important interference with present mill schedules on Government steel. Neither sellers nor buyers are showing anxiety to arrange business for the future, and orders are confined almost wholly to immediate requirements of consumers. The leading steel interest is refraining from solicitation of business and doubtless will continue this policy until it becomes definitely known how long it will remain on Government work. Then its first concern will be to supply its subsidiaries with steel, particularly sheet bars, of which there is still a great scarcity. The leading sheet company is operating on a 50 per cent basis and expects only a gradual improvement during December.

With the exception of the automobile industry and some export buyers, there is no enthusiasm for buying. Consumers are taking shipments on old orders, but new domestic business is as yet a very small factor. Both producers and consumers seem quite content to await further developments. The conference to be held in Washington on Dec. 11, between steel manufacturers and the price-fixing committee of the War Industries Board, which will probably result in the fixing of prices for first quarter of 1919, is counted upon to stabilize the market for that period so that buyers will be encouraged to come into the market with greater confidence.

The automobile industry is an exception among steel consumers in that it expects an almost immediate demand for automobiles and is anxious to resume normal manufacturing activities as quickly as possible. It is therefore bringing pressure for early deliveries of sheets and other forms of steel. A number of export inquiries have come into this market during the past week. These are mostly for small tonnages, but steel companies believe they are the forerunners of a large export demand, which is expected to take up some of the slack resulting from cancellation of Government orders. Export inquiries are coming from nearly all parts of the world, plates being wanted for the Far East, skelp for Europe and wire products for Europe and South America. An export sale of several hundred tons of foundry iron has also been made.

Prices are holding firmly on all materials, except scrap and ferroalloys. Brokers have been able to buy heavy melting steel at $28.50, and this they are applying on contracts made at $29 before the armistice was signed. Low phosphorus melting stock is conspicuously weak, but it is difficult to forecast how much it may decline, as at present no one is willing to buy. Cast scrap and cast iron borings are firm and in fairly good demand.

Consumers of pig iron are buying largely for immediate requirements only, but at least one transaction, involving 30,000 to 35,000 tons of basic, is under consideration for first half. It seems to be difficult for makers and consumers to get together on equitable price arrangements on future deliveries, especially for any period in which there is uncertainty as to whether Government prices will prevail.

Pig Iron.—Few transactions in pig iron have occurred during the past week and these were mainly small tonnages for prompt delivery, or to cover requirements of the next 30 or 60 days. One deal now under consideration involves 30,000 to 35,000 tons of basic iron for first half. It seems to be difficult, however, for buyers and sellers to agree on a form of sale for future deliveries, which will afford ample protection to both under the conditions which may exist. One leading seller of steel-making iron is disposed to make

sliding scale contracts based on current market quotations, but a majority are willing to sell only at the Government price, or in the event that no Government price is in effect at time of shipment, at the last-named Government price. This latter arrangement does not seem acceptable to all consumers and as a result there will probably be comparatively little business placed until there have been further developments. The removal of all Government restriction on shipments of iron is making it possible for the so-called less essential industries to obtain again their normal supplies of iron. A meeting of pig iron producers of the entire country may be held soon to formulate policies for the readjustment period. Sellers continue very optimistic as to the future and show no disposition to make price concessions. A number of resale lots of iron have been disposed of during the past week by consumers whose war work has been canceled and who had larger stocks of iron than they were willing to carry into the inventory period. These sales were made at the Government maximum prices, but a commission was allowed to the middleman.

Basic pig iron, $33; Bessemer, $35.20; gray forge, $33; No. 2 foundry, $34; No. 3 foundry, $33.50, and malleable $34.50, all per gross ton at Valley furnace, the freight rate for delivery in the Cleveland and Pittsburgh district being $1.40 per ton.

Billets and Sheet Bars.—Brokers have been able to pick up small lots of billets, slabs and sheet bars and a few sales have been effected at the maximum prices. Consumers of semi-finished steel, however, are not yet able to obtain increased supplies, except in the case of a few companies which make their own steel. For example, some of the sheet companies have been relieved of a part of their shell steel work and are now able to increase production of sheet bars for their own mills. The leading sheet interest, however, did not exceed 50 per cent production during November on account of steel shortage. The improvement in supply during the latter half of the month averaged only from 5 to 10 per cent over the first half. An ample supply will not become available until present shell steel schedules have been considerably modified.

We quote 4 x 4 in. soft Bessemer and open-hearth billets at $47.50, sheet bars $51, forging ingots $73, and forging billets $60 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Plates.—Some producers of plates are trying to cancel all the fictitious tonnages on their books. This includes quite a lot of old orders taken at about 2.25c. to 2.50c. Consumers have been willing to accept cancellation of such old orders, inasmuch as the question of price on their later contracts has been adjusted in such a way that they do not lose anything.

We quote sheared plates at 3.25c., Pittsburgh mill, for fourth quarter.

Structural Material.—Makers and fabricators of structural steel do not see any indications of resumption of building activity, but this is not surprising to them, as this is ordinarily the quiet time of the year, and also because of the fact that they do not regard present conditions propitious for large investments in steel structures. There have been further cancellations of Government building projects, such as airplane hangars and ordnance buildings.

We quote beams and channels up to 15 in. at 3c. at mill, Pittsburgh, for fourth quarter.

Sheets.—Some of the independent sheet mills have received cancellations on shell steel and can now divert more steel into the manufacture of shell bars and are thus able to increase sheet production. The leading sheet interest is still on a 50 per cent operation basis owing to steel shortage, and only a gradual improvement is expected in December. Some of the sheet mills can now make deliveries in four or five weeks, while others are sold up well into next year. Automobile makers are trying to obtain early shipments so that they may resume their normal work. A large demand from Canada, especially for galvanized sheets, is in prospect. Prices of sheets are given on page 1359.

Rails.—A broker reports that he has been offered light rails by two mills for the first time in two years, but no sale was made owing to the high prices quoted.

Wrought Pipe.—All restrictions on the manufacture of butt-weld pipe have been removed and production on a normal basis is being resumed. There is an especial good demand for oil country goods. Discounts on iron steel pipe given on page 1359.

Boiler Tubes.—There is no change in the situation, output being chiefly for marine and locomotive boilers, and this demand shows no lessening. Discounts on boiler tubes are given on page 1359.

Bolts, Nuts and Rivets.—Cancellations have been received during the past week, especially on bolts for construction work for the Government. Makers still have a great deal of ship work on their books and seemingly are not worried. Jobbers are not placing any new business but are accepting shipments, in most instances, on old orders. Prices are given on page 1359.

Spikes.—Makers of spikes are in a comfortable position as to orders and they are looking for new business soon from the railroads.

Standard sizes of railroad spikes 9/16 x 4½ in. and larger, $3.90 per 100 lb. in lots of 200 kegs of 200 lb. each, or in larger lots. Boat spikes, $5.25 per 100 lb.; rack bolts $4.90 base in lots of 200 kegs or more; less than 200 keg lots, $1 per 100 lb. extra. All f.o.b. Pittsburgh.

Shafting and Screw Stock.—Cancellations of Government orders for screw stock are coming in freely and makers predict that it will take a few months to readjust themselves to peace conditions. The automobile industry is counted upon to take up some of the slack. The demand for shafting is very light.

For fourth quarter we quote cold-rolled shafting at 17 per cent off list in carloads and 12 per cent in less than carloads f.o.b. Pittsburgh.

Tin and Terne Plate.—There is very little selling of tin plate, as the can companies have good stocks on hand. Shipments are going freely to the oil companies. Consumers of black plate are specifying on old orders. Production of terne plate is being increased to meet the anticipated demand for it.

Ferroalloys.—Ferromanganese and spiegeleisen are very weak and probably could be bought at concessions from $250 and $75 respectively, the prices at which they have recently been quoted. Consumers show no interest, however, and no sales are reported aside from an occasional carload. Stoppage of munition work is creating a much weaker market for 50 per cent ferrosilicon, and though no sales are reported, it could probably be bought at $135.

We quote 70 per cent ferromanganese at $250, delivered, and 16 to 18 per cent spiegeleisen, $75, f.o.b. furnace, an addition or deduction of $3.50 per unit being made, when the manganese content is above or below the standard. For delivery over the remainder of the year, and for next year, 50 per cent ferrosilicon is quoted at $140 to $150.

We quote 9 per cent Bessemer ferrosilicon at $55; 10 per cent, $57; 11 per cent, $60.30; 12 per cent, $63.60. We quote 6 per cent silvery iron, $42; 7 per cent, $43; 8 per cent, $45.50; 9 per cent, $47.50; 10 per cent, $50. Three dollars per gross ton advance for each 1 per cent silicon for 11 per cent and over. All the above prices are f.o.b. maker's furnace, Jackson or New Straitsville, Ohio, these furnaces having a uniform freight rate of $2.90 per gross ton, for delivery in the Pittsburgh district.

Wire Rods.—There is some inquiry in the market for wire rods, both for domestic and export, but nothing assuming the proportions of real buying activity. Production is still restricted by shortage of steel, conditions in this respect having shown but slight improvement in the past week. Prices are given on page 1359.

Wire Products.—New demand for wire products is not large, though there are a few export inquiries. One company reports that it is quoting on several small export tonnages, but domestic demand is coming along very slowly. Jobbers are covering only their immediate requirements. The principal activity among makers is the shipping of material on old orders. There have been a few cancellations of long standing orders, but the greater part of such tonnage will apparently be filled. Prices are given on page 1359.

Iron and Steel Bars.—Makers of steel bars are quoting on a few moderate tonnages for nearby delivery, but are not anxious to sell ahead, nor are consumers in a mood to buy ahead. A few export inquiries are reported, and in one instance a quotation of 3.50c. f.o.b.

New York, has been made on a commercial export inquiry for soft steel bars.

We quote soft-steel bars rolled from billets at 2.90c.; from old steel rails, 3c.; common iron bars, 3.50c.; bar iron rolled from selected scrap, 4.25c.; and refined iron bars at 5c., at mill, Pittsburgh, for fourth quarter.

Hot-Rolled Strip Steel.—Some improvement is noted this week in conditions at strip steel mills, which last week were seriously affected by the influenza epidemic. Strip steel makers, however, are still handicapped by a shortage of 4 x 4 in. open-hearth rerolling billets, and production is showing very little increase as compared with a few weeks ago. There have been further cancellations of hot-rolled strip steel for Government work. One order canceled was for 2000 tons, which was to have been used in the manufacture of booster casings. Automobile manufacturers are buying for delivery over the remainder of this year, but shipments may run into next year. In such cases the material will be billed at the ruling price. Government or otherwise, in effect at time of shipment.

We quote hot-rolled strip steel at $3.50 per 100 lb., Pittsburgh, for third quarter, 50c. per 100 lb. additional being charged for special stamping quality.

Cold-Rolled Strip Steel.—A manufacturer of cold-rolled strip steel reports cancellations of orders for this material scheduled for use in airplanes, trucks, machine-gun parts, rifle parts, cartridge clips, magazines and booster cases, etc. To offset these cancellations the normal consumers, such as manufacturers of automobiles, bicycles, hardware, typewriters, sewing machines, phonographs, etc., are beginning to place orders.

We quote cold-rolled strip steel at $6.50 base per 100 lb., from Pittsburgh, for 1½-in. and wider, 0.100 in. and thicker, hard temper in coils under 0.20 carbon. Boxing charge 50c. per 100 lb.

Shafting and Screw Stock.—There is some demand for screw stock, especially from the automobile trade. Cancellations for Government work are being received slowly, but there is still considerable business on the books of makers. Demand for shafting is light and production is also in small volume.

For fourth quarter we quote cold-rolled shafting at 17 per cent off list in carloads and 12 per cent in less than carloads, f.o.b. Pittsburgh.

Hoops and Bands.—Automobile manufacturers are showing some interest in strips and a better demand is expected as soon as the automobile industry shall have resumed its normal activities. Demand for hoops and bands is light and because of this fact production is not being increased, output being approximately on a 50 to 60 per cent basis.

Coke.—Production in the Connellsville coke region this week continues to show a loss and blast furnaces are having difficulty in obtaining sufficient supplies. Foundry coke for prompt delivery seems to be in better supply and consumers have little or no difficulty now in obtaining a few cars as they need them. There is no forward selling. The Connellsville *Courier* says that a loss of 175,000 tons, an average of 35,000 tons per week or 5000 tons per working day during the past five weeks, represents the fuel cost to the Connellsville region of the influenza, epidemic, peace celebrations and other circumstances and incidents which have interfered with regularity of operations. This is perhaps the most pronounced shrinkage in production in the history of the region. That due to zero weather last winter, which lasted for eight consecutive weeks, beginning Dec. 16, was longer, but the total drop in production was much less than during the present period. During the week ended Nov. 16 there was an aggregate production of 276,355 tons, on a coal basis, showing a further falling off, as compared with the previous week of 38,704 tons. The influenza epidemic seems to have taken fresh hold, particularly in the lower Connellsville region, hence the present holds no promise of an early return to improved operating conditions.

We quote 48 hr. beehive blast furnace coke at $6; 72 hr. foundry coke at $7 and crushed coke over ¾ in. at $8 per ton of 2000 lb. at oven. We quote by-product coke at $6.70 for run of ovens and $6.70 for selected foundry coke, but Alabama and Washington. To these base prices should be added the freight rate from the competing beehive coke district which takes the lowest freight rates to the point where such by-product coke is produced, except that there shall be added for coke manufactured in New England 7c. for each 5c. above 60c. in the freight charges per ton (2240 lb.) of coal for water transportation on the coal used in the manufacture of such coke.

Old Material.—Brokers are now able to pick up tonnages of heavy melting steel at $28.50 which they are applying on contracts made at the full maximum before the signing of the armistice. Low phosphorus scrap is much weaker and dealers have offered grade A, the maximum price for which is $39 at $32 delivered without any takers. It is doubtful whether grades B and C could be sold at more than the maximum price for heavy melting steel. Cast scrap and cast iron borings continue firm. One of the large shell plants in this district has about 100 cars of shell forgings, totaling about 4000 tons owned by the British Government which are to be be sold as scrap. A few weeks ago, this material would have brought $34 as grade B low phosphorus, but now it will probably be sold as heavy melting steel at a considerable reduction. Consumers of scrap are staying out of the market and no sales to them have been reported in this district since the signing of the armistice. On the other hand, cancellations of unfilled tonnages are still being made, and one such cancellation last week was of 2000 tons of heavy melting steel. Dealers have been making efforts to sell scrap, but consumers have not been disposed to nibble at any bait that is offered them. A dealer who approached a number of consumers in an attempt to sell scrap of various grades at the maximum prices without the commission met with no encouragement whatever. C. A. Barnes, secretary American Board of Scrap Iron Dealers, has notified members of that association that present maximum prices will hold good until Dec. 31. Whether the War Industries Board will continue fixed prices on scrap after that date he is unable to ascertain, he says, as no one in authority seems able to answer this question. He warns scrap dealers to see that material on contracts is shipped before Dec. 31, and advises dealers that if they are prevented from shipping on account of requests of mills to hold up shipments, or on account of the refusal of the mills to apply for railroad permits, they should place themselves on record with such mills to the effect that if the War Industries Board reduces maximum prices they, the dealers, cannot agree to accept any reduction on such portion of contracts that have not been completed through any fault of the consumer.

Heavy steel melting scrap, Steubenville, Follansbee, Brackenridge, Monessen, Midland and Pittsburgh, delivered	$28.50 to $29.00
No. 1 cast scrap (for steel plants)	29.00
Rerolling rails, Newark and Cambridge, Ohio, Cumberland, Md., Franklin, Pa., and Pittsburgh	34.00
Compressed steel scrap	29.00
Bundled sheet scrap, sides and ends, f.o.b. consumers' mills, Pittsburgh district	29.00
Bundled sheet stamping scrap	$22.00 to 23.00
No. 1 busheling scrap	28.00 to 29.00
Railroad grate bars	28.00 to 29.00
Low phosphorus melting stock (unguaranteed)	29.00
Low phosphorus melting stock (guaranteed)	29.00
Low phosphorus melting stock (bloom and billet ends, heavy plates)	32.00
Iron car axles	46.00 to 46.50
Locomotive axles, steel	46.00 to 46.50
Steel car axles	46.00 to 46.50
Railroad malleable (for malleable works)	34.00
Machine shop turnings	19.00
Cast iron wheels	29.00
Rolled steel wheels	36.00
Sheet bar crop ends (at origin)	35.00
Heavy steel axle turnings	24.00
Heavy breakable cast scrap	28.00 to 29.00
Cast iron borings	19.00
No. 1 railroad wrought scrap	34.00

Producers of reinforcing bars in the Buffalo district are receiving inquiries that indicate purchases of considerable tonnages in the immediate future to apply on work that has been held in abeyance during the war. The removal of restrictions on warehouse stocks of such bars for general uses will result in the cleaning up of a good deal of overdue work which has been for some time in the hands of construction contractors.

Chicago

CHICAGO, Nov. 25—(*By Wire*).

Optimism based on belief that present prices will rule for the remainder of the year at least and that industrial activity will slowly develop and replace war work, is general, though the possibility of a slump is as generally recognized. The holding up of prices is regarded as the crux of the situation in the minds of most producers and of some consumers as well, the latter maintaining that one concession will mean another and a tumbling market. That prices must eventually decline is agreed, but it is believed that a gradual decline after the Government has released its control will be healthier than a precipitate drop, as this will enable labor to adjust itself along with the manufacturers. In steel products and pig iron, no concessions in price are reported. Old material alone is on the down grade.

Many orders for steel are suspended, and they will be cancelled when the Government gives the word. The second lot of French military cars, some 40,000, are held up, as stated in THE IRON AGE last week. Meanwhile domestic cars will forge ahead. The French Government has offered to take plates, shapes and bars in place of shell steel. An independent mill continues to roll shell steel for delivery to a forging plant. To discontinue would mean shutting down a side of the mill, but no orders to discontinue have been received.

While the plate and structural shape situation will be tight for some time to come owing to ship and railroad work, the indications are that industrial consumers' and jobbers' needs will receive some attention, and that by January an easier situation will exist all around. At present the stopping of night and Sunday work and general easing of pressure will help. Meanwhile export demand for sheets, bars and plates grows. One inquiry is for 15,000 tons of plates for Japanese railroads. Structural steel will pick up slowly, considerable hope being based on the action of municipalities. The railroads are buying only for actual needs. The Government has so far directed few cancellations of allocated pig iron. A little new business in both spot and first half iron is being done. The general belief of sellers is that contracts for the first half specifying "the last Government maximum price" will stand as if they were ordinary contracts for future delivery. It is pointed out that while there is a possibility of the market declining, there also is a possibility of an advance which would give buyers the better of it. The point is made also that iron for delivery in the next few months will be made from ore at the present fixed maximum and also other materials contracted for at high levels. Labor has no disposition to accept lower wages.

Relief for the domestic consumer of steel is indicated in the statement of a large producer contained in a notice of the removal of priority restrictions, as follows:

"All orders or contracts on our books, whether they may have been classified or not, will by this act revert to their original status, that is, scheduled and shipped as nearly as possible in order of dating, consistent, of course, with the requirements of the trade."

Still first, of course, come ships, railroads, and other Government work.

Pig Iron.—Producers' representatives are unanimous in saying they will accept no cancellations unless the Government directs that its allocations be annulled, and to date there have been very few instances of this having been done. Of the orders on one large company's books about 30 per cent consists of allocations, while a larger percentage is under contract with companies which have been doing war work, but did not ask the Government to assist them in obtaining material. It is pointed out that if allocated material is cancelled, it would only be fair to cancel all iron ordered for war work. In fact, some producers would prefer to accommodate those who did not seek Government aid in obtaining iron, as these are their regular customers. Some of the others they never heard of before, and they are far out of their territo... It is conceded that the future depends much on th... extent to which cancellations are effected, also that many war contractors have much more iron on hand or on order than they ordinarily need. While cancellations are denied, a few suspensions of delivery exist. The general view taken of contracts for the first half which specify that in the absence of a Government maximum price, the last Government price shall govern is that they are fair and should stand regardless of the fact that competition may establish a lower level. The possibility of a lower market must always be faced by the buyer while it also is possible that prices may rise, in which event the seller is the loser. Sometime ago, it was reported that a leading maker was negotiating to supply large consumers over a period of years at a price to be based on certain averages, but the more common practice has been for a price to be named specifically in the contract. The representative of a large consumer believes the "last Government price" clause to be unfair for the reason, he maintains, that possibility of an advance is remote, while a decline is probable, a situation giving the seller the better chance. On the other hand, it is pointed out that some consumers still have low-priced iron coming to them on old contracts which the war interrupted. These contracts they hold to be valid. Iron to be reshipped for some time to come will be from ore and other material bought at the present maximums. The pledge as to essential use is no longer required with contracts. Though consumers are sitting back and trying to measure the situation, there is a little business both in spot and first half. A producer of silvery sold a lot at 1000 tons for first half, and has placed several smaller lots for December and first half. This furnace believes that present prices may be exceeded and is selling for delivery at whatever the market may be at time of delivery. Some Southern foundry has also been sold, although the furnaces are pretty well sold up. Current business, of course, is not large.

The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable and steel-making irons, including low phosphorus, which are f.o.b. furnace, and do not include a switching charge averaging 50c. per ton:

Lake Superior charcoal, Nos. 2 to 5	$38.70 to $39.60
Lake Superior charcoal, C to AA	40.70 to 42.50
Lake Superior charcoal, No. 6	41.20 to 41.50
Northern coke foundry, No. 1, silicon, 2.25 to 2.75	35.25
Northern coke foundry, No. 2 silicon, 1.75 to 2.25	34.00
Northern high-phosphorus foundry	34.00
Southern coke, No. 1 foundry and No. 1 soft silicon, 2.75 to 3.25	42.00
Southern coke, No. 2 foundry, silicon, 2.25 to 2.75	40.25
Southern foundry, silicon, 1.75 to 2.25	39.00
Malleable, not over 2.25 silicon	34.50
Basic	34.00
Low phosphorus (copper free)	54.00
Silvery, 7 per cent	50.00

Ferroalloys.—The market in ferromanganese remains quiet. There are a few inquiries for speigeleisen and several lots have been sold at $75 furnace. One carload was the largest. It is believed that a round $70 could be done. For a round lot of 50 per cent ferrosilicon $155 was accepted for forward delivery. Prompt is quoted up to $162.50.

We quote 70 per cent ferromanganese at $250, delivered, 50 per cent ferrosilicon at $155 to $162.50, delivered, and 16 to 18 per cent spiegeleisen at $75, furnace.

Structural Material.—The expectation is that fabricating work will pick up slowly, the first large requirements being those from states and municipalities. Investors will naturally be slow to act in view of building costs. The Chicago Board of Local Improvements, Nov. 30, will again take bids on the Michigan Boulevard improvement which includes a bridge over the Chicago River. About 8000 tons of steel is involved. The American Bridge Co. will fabricate 147 tons of girders and brackets for the C. B. and Q. railroad. The Banner Iron Work, St. Louis, will supply 107 tons required for a crane runway for the Scullin Steel Co., St. Louis, and an unknown bidder will supply 200 tons

for four pump houses at various locations for the Prairie Pipe Line Co. Work having been suspended on the lot of French military cars (40,000), domestic cars will proceed at a faster pace. It is felt that in January independent mills will be in a much better position to care for shape demands.

The official mill quotation is 3c., Pittsburgh, which takes a freight rate of 27c. per 100 lb. for Chicago delivery. Jobbers quote 4.27c. for material out of warehouse.

Plates.—No perceptible ease is yet shown in plates, although it is believed that the cessation of night and Sunday work at the shipyards and the subsidence of war work will gradually make it possible for jobbers and domestic consumers to obtain material. The export demand is rapidly developing, one inquiry of to-day being for 15,000 tons wanted by Japanese railroads. It did not result in an order, as the mill to which the offer was made desires to use what it can spare for the first quarter needs of regular customers. The mills, of course, still have their obligations in ship and railroad plates, though these may not be pressing.

The official mill quotation is 3.25c., Pittsburgh, the freight rate being 27c. per 100 lb. Jobbers who have stock quote 4.25c.

Bars.—Should a good customer need steel bars urgently, there is a strong probability that he would be helped out to a reasonable degree, and in January he should be able to get them without trouble. As yet, there is no weakness in the market, but, it is felt that when weakness does come, it will manifest itself first in this product. The makers of bar iron have not only escaped cancellations, but their specifications have been heavier this month than they were in October. The rollers of rail carbon steel are still limited by the supply of re-rolling rails. Mild steel bars have been cancelled but not to any alarming extent.

Mill prices are: Mild steel bars, 2.90c., Pittsburgh, taking a freight rate of 27c. per 100 lb.; discard bars, 3.25c., Chicago; common bar iron, 3.50c., Chicago; refined iron bars, 4.75 to 5c.; rail carbon, 3c., Chicago.

Jobbers quote soft steel bars, 4.17c., bar iron, 4.17c., for ¼ in. and heavier. Reinforcing bars, 4.29½c. base. Under the new price there is no charge for twisting, but extras for cutting quoted as per card. Shafting, list plus 13 per cent.

Sheets.—Inquiry is good, and no cancellations are reported. Export demand figures conspicuously, and one maker states that he can sell out to capacity in two weeks. The price seems to cut but little figure.

Prices on delivery out of stock regardless of quantity. No. 10 box annealed, 5.52c.; No. 28 black, 6.52c., and No. 28 galvanized, 7.77c.

Rails and Track Supplies.—The situation here may be summed up by the statement that the railroads have been instructed to buy only what they actually need. Light rails continue in good demand.

Standard railroad spikes, 3.90c., Pittsburgh. Track bolts, with square nuts, 4.90c., Pittsburgh. Tie plates, steel, 3.25c.; Gage of Iron, 3.75c., f.o.b. maker's mills. The base for light rails is 3c., f.o.b. maker's mill, for 25 to 45-lb. sections, heavier sections taking Government extras.

Bolts and Nuts.—Export inquiries are appearing, but local makers do not care to consider them. Cancellations are surprisingly few and one large order which was annulled has been reinstated. There is no disposition to lower prices, and some far-seeing consumers have expressed a hope that they will continue to hold. The makers of course are now free of restrictions.

Structural rivets, 5.67c.; boiler rivets, 5.77c.; machine bolts to ⅞ x 4 in., 37½ per cent off; larger sizes 25 and 5 off; carriage bolts up to ⅞ x 6 in., 32½ off; larger sizes, 25 off; box pressed nuts, square, tapped, 78c. off; hexagon nuts, 75c. off; coach or lag screws, gimlet points, square heads, 40 per cent off. Quantity extras for nuts are cancelled.

Cast-Iron Pipe.—The Government has suspended its order for pipe required at its air nitrate plants under construction at Toledo and Ancor. Akron, Ohio, believing it can do better in January, has again thrown out bids for 5050 tons of pipe for water works improvements. It was willing to order if given the benefit of any drop in prices, but would not agree to pay more should prices advance. From a contractor, the leading interest has received an order for about 750 tons to be installed at the Great Lakes Naval Training Station.

We quote per net ton, f.o.b. Chicago, ex-war tax, as follows: Water pipe, 4-in., $69.80; 6-in. and larger, $66.80; class A and gas pipe, $1 extra.

Wire Products.—The stoppage of military barbed wire manufacture has released material and more capacity is now being utilized on commercial products. The entire situation looks better. The mills have plenty of inquiries and existing prices are no detriment to business of a prompt character. There is no stocking up.

Old Material.—It is as difficult as ever to determine the actual bottom of the market for the reason that but little business is being done. A dealer who has material to move will accept the best price he can obtain, and if he is short on a contract, he will pay a good price. Steel scrap is supported by the fact that dealers owe so much to the mills, despite the fact that new cancellations have appeared. Inasmuch as the railroads have practically ceased selling direct to consumers, it is felt that the lists will become more important. Offerings now pending come from the Chicago & Alton and Rock Island. The quotations for many items must still be regarded as nominal. With others substantial declines are again shown.

We quote for delivery in buyers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

Old iron rails	$37.00 to $39.00
Relaying rails	55.00 to 63.00
Old carwheels	29.00
Old steel rails, rerolling	32.00 to 34.00
Old steel rails, less than 3 ft.	32.00 to 34.00
Heavy melting steel	27.00 to 28.00
Frogs, switches and guards, cut apart	27.00 to 28.00
Shoveling steel	27.00 to 28.00
Heavy steel axle turnings	22.00 to 23.00

Per Net Ton

Iron angles and splice bars	$34.82
Iron arch bars and transoms	40.50
Steel angle bars	28.00 to 29.00
Iron car axles	41.52
Steel car axles	41.52
No. 1 railroad wrought	28.00 to 29.00
No. 2 railroad wrought	27.00 to 28.00
Cut forge	27.00 to 28.00
Pipes and flues	22.00 to 23.00
No. 1 busheling	24.50 to 25.50
No. 2 busheling	16.00 to 17.00
Steel knuckles and couplers	30.36
Coil springs	30.36
No. 1 cast scrap	27.00 to 28.00
Boiler punchings	32.59
Locomotive tires, smooth	35.00 to 36.00
Machine-shop turnings	13.50 to 14.50
Cast borings	13.50 to 14.50
Stove plate and light cast scrap	21.00 to 22.00
Grate bars	21.00 to 22.00
Brake shoes	21.00 to 22.00
Railroad malleable	28.00 to 28.50
Agricultural malleable	26.00 to 27.00
Country mixed scrap	17.00 to 18.00

Philadelphia

PHILADELPHIA, Nov. 26.

Questions relating to foreign trade and to labor are demanding fully as much attention as cancellations of orders. Following the announcement last week of cancellations of rolling stock and rails intended for shipment to France, many smaller cancellations have come, but nothing of outstanding importance is reported and general feeling in the trade is more hopeful. The number of people who predict that, if the Government ceases to regulate prices, quotations will advance is increasing. While the general expectation is that the Government will continue regulation as to pig iron and finished materials for at least another quarter, it now seems probable that in old material prices will be allowed to take their own course, and that the Sub-Committee on Iron and Steel Scrap of the American Iron and Steel Institute will have very little to do after Jan. 1.

As to labor, the readjustment on an eight-hour basis is under way and so far no serious trouble has been experienced. In one steel plant in eastern Pennsylvania a small strike was declared on account of over-

time being discontinued, but this trouble was soon adjusted and the men are now working eight hours without overtime. Some reports indicate that many workingmen of foreign birth are trying to arrange to go to their native lands for at least a temporary stay, one report being that 1000 coke workers were about to sail for Italy; but it is not believed that it will be possible, at least for a considerable time, for many workingmen to obtain passage. Suggestions that many thousands of Germans plan to come to this country are not being received with favor by either employers or employees.

An interesting question has arisen in regard to a large tonnage of plates booked for export to Japan a little more than a year ago. About 500,000 tons was contracted for by Japanese shipbuilders at prices ranging from 5c. to 10c., and averaging probably 8c. About half of this tonnage was shipped, but it is estimated that fully 200,000 tons was not delivered on account of inability to obtain vessel capacity and for other reasons. Some exporters are in favor of allowing the shipbuilders to cancel the undelivered tonnage, if they wish to do so, and enter new orders at lower prices, but it is doubtful whether the steel companies will take this position, as some of them feel that, in spite of the delay in delivery, buyers are under obligations to take the plates and that the carrying out of the contracts should be insisted upon.

Pig Iron.—The recent report of the sale of 100,000 tons of basic refers to a transaction of two or three months ago, and is interesting merely as showing that there has been somewhat more buying for delivery for the first half of the year than was known. There has been very little new business during the past week, but apparently no effort is being made to obtain concessions below the Government prices. One Virginia furnace, which has sold about 3000 tons within a few days, has the following paragraphs inserted in each contract:

> This order is accepted subject to any United States Government requirements or any rules, regulations or instructions as to the disposition of product made by its authorized agency.
>
> The price at which this order is now accepted shall be subject to revision by any authorized United States Government agency and should, during the life of this contract, the establishing of prices be discontinued under such authority then the last price so prevailing shall govern for any undelivered iron under this contract.

As to the cancellation of allocated iron there is still considerable discussion, and J. L. Replogle, Director of Steel Supply, has made the following ruling:

> We believe that if the contract covering iron allocated to any consumer has been duly signed by both the consumer and the producer, the transaction then becomes a regular commercial matter, over which we have no jurisdiction. The contract with all its obligations would be just the same as if the iron had not been allocated by the American Iron and Steel Institute Committee, and any question arising relative to the contract would have to be settled by the interested parties.
>
> In cases where the transaction has not been completed through the signing of formal contracts or through the interchange of confirming letters, we will withdraw the allocation request, should we be advised by either the producer or consumer that such a course is desired.

The policy to be pursued by various sellers promises to differ, as some are very firm in insisting that no contracts shall be canceled, while others are disposed to permit cancellations in cases where buyers show that the enforcement of contracts will work a hardship. We quote standard grades of iron for delivery in Philadelphia, except low phosphorus grades, for which f.o.b. furnace prices are quoted:

Eastern Pennsylvania No. 1 X	$40.90
Eastern Pennsylvania No. 2 X	39.15
Eastern Pennsylvania No. 2 foundry	37.90
Virginia No. 2 X	41.75
Virginia No. 2 foundry	40.50
Basic	36.60
Gray forge	36.60
Bessemer	38.80
Standard low phosphorus (f.o.b. furnace)	54.00
Low phosphorus (copper bearing, f.o.b. furnace)	51.00

Ferroalloys.—The market continues weak and although the quotation of $250 delivered is still being named for ferromanganese, no transactions are reported. Further concession has been made in spiegeleisen, some tonnage of 17 to 22 per cent having been sold at $70. We quote 70 per cent manganese nominally at $250, delivered, and 16 to 18 per cent spiegeleisen at $70, f.o.b. furnace.

Coke.—A great deal of complaint is being made as to the supply of coke, both as to quality and quantity, and the general explanation is that the irregular operation of ovens, due to various celebrations and also to sickness of coke workers, is responsible for the poor quality as well as the decreased output. The labor situation continues serious and it is evident in some coke regions, especially in Virginia, that on account of the relatively high prices of coal greater effort is being made to obtain workers for coal mining than for the operation of coke ovens. Government prices still prevail.

Finished Material.—Operators of steel plants are breathing easier as Government restrictions are lifted, and there is also a more cheerful feeling on account of the increasing inquiry of new business from both foreign and domestic consumers. In some cases in which cancellations have been ordered, revocations have come quickly. This was true in the case of a large jobber in the Central West, who, after ordering a cancellation, revoked the order. The same was true in the case of 6000 tons of bars placed some time ago by an airplane manufacturer in England. It is evident that some steel tonnages canceled by the Government will be used by private companies; for example, a tonnage canceled by the Emergency Fleet Corporation will be taken by the Sun Shipbuilding Co. and the vessel work continued. An order for 8000 steel tire wheels and 15,000 spare tires has been placed by Japanese railways. Inquiries have been sent out for the steel for the 2000 100-ton all-steel hopper cars for the Virginian Railroad, recently ordered by the Railroad Administration and mentioned in THE IRON AGE of Nov. 7. We quote plates at 3.49½c.; plain structural material, 3.24½c.; soft steel bars, 3.14½c.; common bar iron, 3.74½c.; refined iron bars, 5.24½c.; No. 10 blue annealed sheets, 4.49½c.; No. 28 black sheets, 5.24½c., and No. 28 galvanized sheets, 6.49½c., all Philadelphia.

Old Material.—Marked weakness prevails in the old material market and while some products are not quotably lower, simply because there are no known transactions, other grades are freely quoted from $1 to $3 lower. Heavy melting steel has receded fully $1 and No. 1 yard wrought about $1.50. Turnings and borings have also declined $1. There is no demand for low phosphorus material. We quote for delivery in Philadelphia and nearby points as follows:

No. 1 heavy melting steel	$37.00
Steel rails, rerolling	34.00
No. 1 low phosphorus, heavy, 0.04 and under	39.00
Low phosphorus, 0.04 and under	36.50
Low phosphorus, 0.06 and under	$32.00 to 34.00
Old iron rails	39.00
Old carwheels	29.00
No. 1 railroad wrought	34.00
No. 1 yard wrought	31.00 to 31.50
Country yard wrought	29.00
No. 1 forge fire	27.00 to 27.50
Bundled skeleton	28.00
No. 1 busheling	31.00
No. 2 busheling	19.00 to 20.00
Turnings (for blast furnace use)	18.00
Machine-shop turnings (for rolling mill use)	18.00
Cast borings (for blast furnace use)	18.00
Cast borings (clean)	18.00
No. 1 cast (for steel plant use)	28.00
No. 1 cast (cupola sizes)	31.00
Grate bars	24.50 to 25.00
Stove plate	24.50 to 25.00
Railroad malleable (for steel plants)	29.00
Railroad malleable (for malleable works)	34.00
Wrought iron and soft steel pipes and tubes (new specifications)	33.00
Ungraded pipe	28.00

The Loomis-Beardsley Mfg. Co., Columbus, Ohio, whose incorporation was recently noted, will soon be in the market for lathes, drill presses and other machine tools needed for the manufacture of automobile accessories.

Buffalo

BUFFALO, Nov. 25.

Pig Iron.—Furnacemen and melters alike are inclined to wait and see what is going to be done relative to readjustment in prices and allocations before much new business is negotiated. Meantime furnace operations and shipments are going along in about the same ratio as a week ago. No cancellations of any kind are reported and one producer reports rather brisk inquiry for small lots and has taken on several small orders aggregating between 1000 and 2000 tons foundry grades for first quarter delivery for domestic business at present prices. All iron allocated is going forward to customers, who evidently have commercial business for all tonnages not covered by allotment and customers are melting about the same amount of iron as recently. Allocations of the producer referred to will fill up capacity until the latter part of February and after that the company, which will have plenty of iron to take care of demand for the remainder of first half, has commenced to negotiate such orders. Some other producers are holding back to determine what changes in prices, if any, for the first quarter of 1919 will be put in effect Jan. 1 by the Government. It is considered by most furnacemen that the only likelihood of a change will be because of the coke and labor situation. With the opening of the new year it is expected there will be plenty of business for everyone, both for domestic and foreign. Some very attractive tonnage for shipment abroad is in sight. We continue last week's price schedule as follows, f.o.b furnace Buffalo:

No. 1 foundry, 2.75 to 3.25 silicon	$37.00
No. 2 X, 2.25 to 2.75 silicon	35.25
No. 2 foundry, 1.75 to 2.25 silicon	34.00
Gray forge	33.00
Malleable, silicon not over 2.25	34.50
Basic	33.00
Bessemer	35.20
Lake Superior charcoal, regular grades, f.o.b. Buffalo	38.50

Finished Iron and Steel.—Some readjustments of orders are being made by the cancellation of certain sizes of finished material in bars and shapes originally specified for war work requirements and the substitution of other sizes and tonnages for commercial business is taking place. Mills and agencies are not now requesting customers to furnish priority certificates or affidavits. Jobbers now sell without regard to priorities, such restrictions having been removed by the Government and distributors are buying a little more freely in consequence, at the Government schedule of prices. No cancellations are being received from regular customers.

Old Material.—The market is unsettled and prices have a softening tendency, but there is little indication of a declining market, providing mills continue operations as at present. There is no buying on the part of mills just now, however, and the only business current is between dealers to procure material to fill old contracts with consumers. The market on heavy melting steel would be $28.00 to $29.00 if consumers were buying, but there are no large tonnages of this commodity on the market at any price, although dealers consider $29.00 the maximum for any purchases they would make. Cast scrap and malleable scrap are very scarce and any buying there is is confined to dealers. If it were not for the latter feature, the market would be almost lifeless. Although the Government schedule is nominally maintained, if it were not for this sustaining fact, the market on several commodities might drop noticeably and the representative prices would be $31.00 to $33.00 for No. 1 railroad and machinery cast scrap, $42.00 to $43.00 for both iron and steel axles, $29.00 maximum for old car wheels, $32.00 to $33.00 for railroad malleable, $17.00 to $18.00 for machine shop turnings, $23.00 to $24.00 for heavy axle turnings; $17.00 to $18.00 for cast borings, $34.00 to $35.00 for iron rails, $24.00 to $25.00 for locomotive grate bars, $25.00 to $26.00 for stove plate, $24.00 to $25.00 for wrought pipe, $27.00 to $28.00 for No. 1 busheling scrap, and $22.00 to $23.00 for bundled sheet stamping scrap. There is no present buying in low phosphorus scrap and nominal prices are under the Government schedule. The market in practically all lines is waiting to see what will happen to Government prices Jan. 1. We continue to quote regular Government schedule prices as follows per gross ton, f.o.b. Buffalo:

Heavy melting steel	$29.00
No. 1 low phosphorus, heavy, 0.04 and under	39.00
Low phosphorus, 0.04 and under	36.50
Low phosphorus, not guaranteed	34.00
No. 1 railroad wrought	34.00
No. 1 railroad machinery cast	34.00
Iron axles	$44.00 to 46.00
Steel axles	44.00 to 46.00
Carwheels	29.00
Railroad malleable	34.00
Machine shop turnings	18.00 to 18.50
Heavy axle turnings	24.00
Clean cast borings	18.00 to 19.00
Iron rails	36.00 to 37.00
Locomotive grate bars	27.50 to 28.00
Stove plate	28.50 to 29.00
Wrought pipe	27.00 to 28.00
No. 1 busheling scrap	29.00 to 30.00
Bundled sheet stamping scrap	25.00 to 26.00

Birmingham

BIRMINGHAM, ALA., Nov. 25.

Pig Iron.—Cancellations, while still coming in, form no considerable total. Inquiry for 1919 is on the increase. The cancellations are of two kinds: iron for war essentials where the order for the product has been withdrawn, and past-due and undelivered tonnage. Allocated requests for cancellation continue to be referred to the War Industries Board. The hesitant disposition is not so marked as it was, and there is a growing belief in price firmness. All interests have opened up for 1919 for regular customers in one way or another, feeling free to book according to capacity. A large foundry-iron interest reports a total booking of 90,000 to 100,000 tons for the first half, most of it, however, having been made several weeks ago and all specify the last price named by the Government in case price fixation is removed. One interest has sold a small tonnage to one or two customers covering all of 1919. A third maker reports a limited tonnage for 1919 just booked for its regular trade. Makers of agricultural machinery are among those who have recently placed orders. Stove works, owing to the limited supply allowed them, have a considerable amount of past-due iron on the books that has become available, and have shown little disposition toward new buying. Pipe shops have not yet changed to merchant trade production, and likewise are not sounding the market to any great degree. It might still be said to be a partially waiting period with a more marked tendency to pass into the "as usual" class. One furnace interest had not a pound of iron on its yards one day the past week. Another says its first quarter make has been absorbed by allocations against bare yards. It may be with interest reiterated that Alabama comes to a new year with a deficit of 360,000 tons in production, compared with 1917, and with 25,000 to 30,000 tons of yard stocks compared with over 250,000 tons on Jan. 1, 1918. There is a total deficit in stocks and manufacture of 600,000 tons compared with the preceding year. In this light withdrawal from war work to peace time production suggests no "elegant sufficiency" of metal in this field. Allocations have not ceased, but come in smaller tonnages, and principally for shipbuilding. It is practically all high-grade analysis metal, and the lots booked by one concern run from 40 to 1300 tons. A Middle Western agricultural implement maker booked 2000 tons for the first half. The Gulf States Steel Co. is reported as having moved out of war work into nonessential with the loss of only one day. Alabama war production was, almost without exception, done with machinery already installed and there will be no scrapping of any kind. We quote, per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry and soft	$34.00
Basic	33.00

Cast-Iron Pipe.—This trade is marking time. The only work is that for the Government, which is grow-

ing less, while the municipal and merchant trade hesitates on account of prices. It is unwilling to invest heavily in stocks until the trade is stabilized sufficiently to encourage home building and municipal improvements. Natural gas and oil pipe lines in Louisiana and Texas hold out prospect of early business.

Coal and Coke.—Coal production fell to 329,000 tons, compared with 348,000 tons the preceding week, owing to a reappearance of the influenza. Those in a position to know say that, owing to the higher prices for outside day work, instituted by the Government, many miners have quit digging coal to take such employment, this constituting one cause of the decrease in coal output. Furnaces are by no means getting all the coke they could use, the result of which is that iron production cannot increase over the average monthly decline this year of around 30,000 tons. The foundries are supplied with 72-hr. coke, but the furnaces are real and actual sufferers.

Old Material.—Neither yard men nor consumers can agree on what the scrap market is and what prices are. There is no standard. Prices named below are those for prompt shipment and principally in small quantities. Wrought iron holds its own more firmly than other scrap, owing to increased consumption in this territory. Yards are accumulating scrap at a recession under former prices. Delivery is largely confined, outside of the prompt business mentioned, to old orders. Large interests are buying sparingly. We quote, per gross ton, f.o.b. Birmingham district yards, as follows:

Old steel axles	$35.00 to $40.00
Old steel rails	28.00 to 30.00
Heavy melting steel	23.00 to 24.00
No. 1 railroad wrought	29.00 to 30.00
No. 1 cast	27.00 to 29.00
Old carwheels	27.00 to 29.00
Tram carwheels	26.00 to 28.00
Machine-shop turnings	15.00 to 16.00
Cast-iron borings	14.00 to 15.00
Stove plates	23.00 to 25.00

St. Louis

ST. LOUIS, Nov. 25.

Pig Iron.—While consumers would buy pig iron if it were offered at a price which seemed good to them, the fact that practically no furnaces are making any offerings, save one charcoal furnace, with the further fact that consumers are sufficiently well supplied, for the moment, to meet any current needs, is leading them to await developments as to allocation regulations and Government control of prices before attempting to place contracts for future delivery. There is no question that domestic needs are such as to keep the plants busy as they are withdrawn from Government work and, therefore, there is no uneasiness as to the continuance of activity in this district. The occasional small lot of surplus iron or that varying from standard analysis continues to appear on the market and is readily taken.

Coke.—The market continues to show an easier condition as a result of the requests of buyers to hold up on some of the deliveries already contracted for. In consequence considerable small selling is being done from day to day, though, of course, transactions are still at Government prices. By-product plants continue in sold-up condition, their contracts being maintained, and these, therefore, are offering nothing except some domestic coke or broken lots of metallurgical coke.

Finished Iron and Steel.—Short supply is still reported by the warehouses, and, in consequence, the relief coming from the abolishment of the boards of control is more apparent than real, as actual deliveries to domestic consumers are not particularly relieved. Mill representatives are not yet in position to take or make contracts and there is, therefore, nothing new in the situation as to this source of supply, though it is hoped that contract making may be resumed before long. For stock out of warehouse we quote as follows: Soft steel bars, 4.24c.; iron bars, 4.50c.; structural material, 4.34c.; tank plates, 4.59c.; No. 8 sheets, 5.54c.; No. 10 blue annealed sheets, 5.59c.; No. 28 galvanized sheets, black sheet gage, 7.84c.; No. 28 black sheets, cold rolled, one pass, 6.59c.

Old Material.—Scrap market demoralization continues with no buying and consumers taking nothing and holding back deliveries on contracts. There is no trading among dealers except for spot delivery on immediate needs. We have revised prices and quote dealers' prices, f.o.b. customers' works, St. Louis industrial district, as follows:

Per Gross Ton

Old iron rails	$34.00 to $35.00
Old steel rails, rerolling	30.50 to 31.00
Old steel rails, less than 3 ft.	28.00 to 28.50
Relaying rails, standard sections, subject to inspection	55.00 to 60.00
Old carwheels	28.50 to 29.00
No. 1 railroad heavy melting steel scrap	27.00 to 27.50
Heavy shoveling steel	24.50 to 25.00
Ordinary shoveling steel	24.00 to 24.50
Frogs, switches and guards, cut apart	27.00 to 27.50
Ordinary bundled sheet scrap	21.50 to 22.00
Heavy axle and tire turnings	18.00 to 18.50

Per Net Ton

Iron angle bars	$29.50 to $30.00
Steel angle bars	25.00 to 25.50
Iron car axles	39.00 to 39.50
Steel car axles	39.00 to 39.50
Wrought arch bars and transoms	39.00 to 39.50
No. 1 railroad wrought	27.00 to 27.50
No. 2 railroad wrought	26.00 to 26.50
Railroad springs	25.50 to 26.00
Steel couplers and knuckles	27.00 to 27.50
Locomotive tires, 42 in. and over, smooth inside	32.00 to 32.50
No. 1 dealers' forge	20.50 to 21.00
Cast iron borings	15.00 to 15.50
No. 1 busheling	24.00 to 24.50
No. 1 boilers cut to sheets and rings	16.00 to 16.50
No. 1 cast scrap	24.00 to 24.50
Stove plate and light cast scrap	18.00 to 18.50
Railroad malleable	25.50 to 26.00
Agricultural malleable	22.00 to 22.50
Pipes and flues	20.00 to 20.50
Heavy railroad sheet and tank scrap	18.00 to 18.50
Railroad grate bars	17.00 to 17.50
Machine shop turnings	15.75 to 16.25
Country mixed scrap	18.00 to 18.50
Uncut railroad mixed scrap	19.50 to 20.00
Horseshoes	25.50 to 26.00

New York

NEW YORK, Nov. 26.

Pig Iron.—During the past few days, furnaces and sales agents have received inquiries aggregating large tonnages for various grades of pig iron for shipment to foreign countries, including China, Japan, Holland and South America. These inquiries have excited much interest as to whether they represent a real demand or merely a sounding of the market to determine conditions. The inquiries came through export houses and it is impossible to form any definite opinion as to their value. While it is not easy to obtain vessel tonnage for export, some is available and it will be possible to ship a considerable tonnage of pig iron if there is any general demand for it and a willingness to pay a fair price. The domestic market is very dull. An eastern Pennsylvania furnace which had about 10,000 tons to place for the first half of next year and up to last week had taken orders amounting to 8000 tons, has disposed of the remaining 2000 tons and could have taken on a larger tonnage. These orders are subject to revision as to price at future dates. Some cancellations are being received but the volume is not large. We quote prices as follows for tidewater delivery for Northern and Southern grades up to Jan. 1, 1919:

No. 1 X, silicon, 2.75 to 3.25	$40.90
No. 2 X, silicon, 2.25 to 2.75	39.15
No. 2 plain, silicon, 1.75 to 2.25	37.90
No. 2 X Virginia, silicon, 2.25 to 2.75	42.95
No. 1 Southern (all rail)	43.20
No. 2 Southern (all rail)	41.70

Ferroalloys.—Demand for both ferromanganese and spiegeleisen is very light and sales have been only in odd lots, principally to cover immediate needs. For ferromanganese these transactions have gone at $250, delivered, while some spiegeleisen is understood to have

sold at 70, furnace, for grades higher than 16 to 18 per cent, which is a slight concession. Two or three fairly large amounts of re-sale spiegeleisen are being offered, one of 2000 tons of 18 to 22 per cent alloy, and it will not be surprising if similar lots of ferromanganese are put on the market. The 50 per cent ferrosilicon market is quiet with quotations ranging from $145 to $150, delivered, for desirable orders on contract with $155 to $160 asked for spot and early delivery, depending in each case on the quantity involved.

Finished Iron and Steel.—Export inquiry is the most important feature of this market and the volume is growing. In nearly every case reports are that consumers from many foreign countries are feeling out the market for plates, shapes and bars. There is a marked demand for plates and a lesser one for iron and steel bars. It is difficult, however, to learn just what the quotations on such material are averaging. One report is to the effect that anywhere from 3.50c. to 4c. has been obtained on heavy plates and sales of small lots have been made as high as 6c., while on steel bars about 3.50c. per lb., Pittsburgh, is reported. There are inquiries also for iron bars for export. One interesting statement is that in the case of Belgium all buying will be in the hands of or under the sanction of Herbert Hoover when purchasing starts. Cancellations continue to be reported involving plates for Great Britain and for France. One mill has had orders canceled on which about 60 per cent work had been done and another states that its total cancellation amounts to about 25,000 tons. In some instances the mill does not know exactly where it stands on certain orders, but an encouraging phase is the fact that there are on hand domestic orders which have never been entered as contracts, but which will now receive attention, buyers still expressing a desire for the material. While pessimism appears in some quarters, the general feeling is one of optimism. In structural steel the taking of bids on the naval ordnance plant at Charleston, W. Va., involving 21,000 tons, has been postponed to Dec. 9 from Nov. 21, and there has also been a postponement in the case of the 500 tons for wireless towers for Monroe, N. C., bids for this to go in on Dec. 2. The Pennsylvania Railroad is inquiring for 350 tons for 13 small bridges, 180 tons for an extension to a shop at Altoona and 1200 tons for three bridges. The Bethlehem Steel Co. has taken 170 tons for a bridge for the Central Railroad of New Jersey at Elizabeth, N. J., and Deitrich Brothers, Baltimore, 250 tons for buildings for the Navy at Yorktown, Va., but no decision has yet been announced as to the 1200 tons for the same purpose. The Seneca Engineering Co. has taken 180 tons for a bridge for the Erie Railroad at Rochester and it is understood that the Bethlehem Steel Co. will furnish the steel. The 2000 tons for the light machinery and electrical shop at the Brooklyn Navy Yard has gone to a construction company as low bidder which has not been prominently in the market for some time. We quote mill shipments as follows: Steel bars, 3.17c.; shapes, 3.27c.; plates, 3.52c.; common bar iron, 3.77c., and refined bar iron, 5.27c., all New York. Out-of-store prices are 1c. higher.

Cast-Iron Pipe.—The cancellations of cast-iron pipe represent a much smaller tonnage than was expected. In fact, one company states that the tonnage is not one-tenth as large as was expected. No new business of importance has developed, but it is expected that as soon as numerous cities can make financial arrangements, orders for large tonnages of badly needed pipe will be entered. Government prices are $67.70, New York, for 6-in. and heavier; $70.70 for 4-in., $77.70 for 3-in., and $1 additional for Class A and gas pipe.

Old Material.—Cancellations thick and fast are coming from all directions and prices continue to recede. Transactions are largely between the dealers and brokers, as the consumers are buying very little scrap at the present time and evidently are waiting for a further decline of the market. Stove plate and locomotive grate bars have declined $2 to $3, and malleable cast, $1. Lower prices are also being named on No. 1 heavy cast and heavy melting steel is 50c. lower. We quote buying prices of dealers and brokers, per gross ton, New York, as follows:

Heavy melting steel	$23.50 to $24.00
Rerolling rails	29.50 to 30.50
Relaying rails	58.00 to 60.00
Iron and steel cars axles	..... 43.40
No. 1 railroad wrought	30.00 to 30.50
No. 1 railroad wrought, cut to not less than 10 in. or over 24 in.	35.00 to 36.00
Wrought-iron track scrap	27.50 to 28.50
Forge fire	22.00 to 23.00
No. 1 yard wrought, long	27.00 to 28.00
Light iron	10.00 to 11.00
Cast borings (clean)	15.00 to 16.00
Machine shop turnings	15.00 to 16.00
Mixed borings and turnings	15.00 to 16.00
Iron and steel pipe (1 in. minimum diameter), not under 2 ft. long	27.00 to 28.00
Stove plate	22.00 to 23.00
Locomotive grate bars	22.00 to 23.00
Malleable cast (railroad)	29.00 to 30.00
Old carwheels	25.00 to 26.00

Prices which dealers in New York and Brooklyn are quoting to local foundries, per gross ton, are:

No. 1 machinery cast	$32.00 to $33.00
No. 1 heavy cast (columns, building materials, etc.), cupola size	30.00 to 31.00
No. 1 heavy cast, not cupola size	24.00 to 25.00
No. 1 cast (radiators, cast boilers, etc.)	25.00 to 25.50

Cincinnati

CINCINNATI, Nov. 26—(*By Wire*).

Requests for the cancellation of foundry iron contracts, with very few exceptions, have been refused. The instances where cancellations have been accepted involve lots allocated to industries formerly engaged in war work. The argument presented by pig iron merchants calling attention to the fact that the furnaces previously shipped large tonnages of iron on low-priced contracts before the Government took charge of the situation has not been without good effect, and as a rule the foundry melters are more inclined to view the situation from the producers' standpoint. In a number of cases hold-up requests have been granted, but it is impressed on the buyer that this iron should be moved or paid for within a certain period of time. Foundries in this vicinity have received a number of hold-up orders on machine tool and other castings and feel justified in asking the furnaces not to crowd them with metal that cannot be used promptly. No definite information is in hand as to how soon the situation will clear up, but opinions are expressed that the change from war into peace work will be worked out without causing any very serious hardships. As yet no outlet for iron necessary to pick up the slack has developed, although the stove makers are expected to come into the market and purchase for their future requirements. These melters have a comparatively small amount of iron contracted for, and since all restrictions on the manufacture of stoves have been removed, they will doubtless need considerable pig iron and scrap when their foundries are again in full operation. Basic and Bessemer iron furnaces in southern Ohio are said to feel easy as far as the future is concerned because of contracts that will carry them through the next few months. Agricultural implement makers are taking all iron of every kind that is due them.

Based on freight rates of $3.60 from Birmingham and $1.80 from Ironton, we quote, f.o.b. Cincinnati:

Southern coke, No. 1 f'dry and 1 soft	$38.85
Southern coke, No. 2 f'dry and 2 soft	37.60
Southern coke, No. 3 foundry	37.10
Southern No. 4 foundry	36.85
Southern gray forge	36.60
Ohio silvery, 8 per cent silicon	49.30
Southern Ohio coke, No. 1	37.05
Southern Ohio coke, No. 2	35.80
Southern Ohio coke, No. 3	35.30
Southern Ohio malleable Bessemer	36.20
Basic, Northern	34.80
Standard Southern carwheel	54.60

Finished Material.—The sheet mills are now able to make better shipments on orders that were placed several months ago; the scarcity of sheets in jobbers'

hands makes this condition a welcome one. But the mills are not able to take on any new business for prompt shipment. As a rule in every line buyers are marking time and are not willing to order material for future shipment other than that already contracted for. Although wire nails and barbed wire have been exceedingly scarce, these are now easing up and the throwing on the local market of approximately 3000 kegs of wire nails intended for a large Government plant near Cincinnati will more than supply any demand at the present time. It is needless to state that nearly all jobbers' stocks of every kind are lower than they probably ever have been. There is a sharp slackening in the demand for bolts, nuts, screws, etc., from machine-tool builders. Shafting is also not wanted and quite a number of requests to hold up supplies of this kind are reported from different sources.

The following are local jobbers' prices: Steel bars and small structural shapes, 4.13c. base; large round and squares 2 in. and over, 4.23c. base; plates, 4.48c. base; No. 10 blue annealed sheets, 5.48c.; steel bands, 3/16 in. and lighter, 4.98c. base (using the new band list). Reinforcing concrete bars, 4.25½c., and wire nails, $4.23 per keg base.

Coke.—The reappearance of influenza in the Connellsville district is said to be responsible for a reduction in the output there, but as the consumption of foundry coke is falling off no one has suffered from any lack of fuel. No interest is taken in coke for shipment after Jan. 1, but occasionally carload lots are taken by stove foundries whose supplies of fuel are not so great as those held by the jobbing foundries. The furnaces are receiving all of the 48-hr. coke needed for their full operation.

Old Material.—The market is weak and selling prices are now below the Government maximum, although as far as buyers are concerned they are taking no interest in the situation, except in holding up shipments and in some cases asking for cancellation of orders. Dealers are rushing forward shipments on contracts as fast as possible to anticipate a further movement of this kind, and as a consequence consumers' yards are rapidly accumulating more than the usual amount of scrap usually carried by them. It is reported, from more than one source, that offerings of scrap by the railroads and others are on the increase and that dealers have little trouble in taking in the material at practically their own figure, which is very different from conditions 30 days ago. The following are buying market prices, f.o.b. cars Cincinnati and southern Ohio, in carload lots:

Per Gross Ton	
Bundled sheet scrap	$18.00 to $18.50
Old iron rails	28.50 to 29.00
Relaying rails, 50 lb. and up	44.50 to 45.00
Rerolling steel rails	28.50 to 29.00
Heavy melting steel scrap	25.50 to 26.00
Steel rails for melting	24.00 to 24.50
Old carwheels	25.00 to 25.50
Per Net Ton	
No. 1 railroad wrought	$23.00 to $23.50
Cast borings	11.00 to 11.50
Steel turnings	12.00 to 12.50
Railroad cast	23.00 to 23.50
No. 1 machinery	25.00 to 25.50
Burnt scrap	16.00 to 16.50
Iron axles	35.00 to 35.50
Locomotive tires (smooth inside)	28.00 to 28.50
Pipes and flues	17.00 to 17.50
Malleable cast	20.00 to 20.50
Railroad tank and sheet	14.00 to 14.50

Cincinnati Molders' Demand

CINCINNATI, Nov. 26—(*By Wire.*)—Union iron molders made a demand on foundry operators here this week for $7 for an 8-hr. day and time and one-half for overtime and double time for legal holidays. They also demand that piecework be abolished. The present wage scale is $5.25 for a 9-hr. day.

Exporters of ore from Sweden are now required to state in the documents submitted to the customs authorities not only the quantity of ore, but also the mine from which it originates, and no iron-ore shipments will be cleared until the Ore Export Bureau of the Swedish Trade Commission has given its consent.

British Steel Market

Many Cancellations—New Fixed Export Prices—Large Peace Bookings

(*By Cable*)

LONDON, ENGLAND, Nov. 27.

Many iron and steel orders of the Government have been canceled and others reduced, but a big reserve of peace work is booked. Arrangements have been made to import pre-war quantities of iron ore, also to release iron and steel immediately from control and to fix temporarily new maximum prices for steel. The supply of non-ferrous metals is sufficient to permit of the immediate release from control of some and of nearly all the rest within six months.

Following are the official steel export prices fixed on all f.o.b. net cash shipments per gross ton:

Ship, bridge and tank plates, £16 10s.

Boiler plates, £17 10s.

Checker plates, £18.

Ship, bridge and tank thin plates, £19 10s., with angles and other sections at £16 2s. 6d.

Small angles, tees and flats, £20; joists, £16 2s. 6d.; rounds, squares and hexagons, £17 10s., with small sizes at £20.

Rails, 60-lb. and over, £15 10s., with those under 60 lb. at £15 12s. 6d.

Ordinary billets, £13 10s., with special billets at £15.

Pre-armistice quotations for domestic business on various products were as follows:

Tin plate, coke, 14 x 20; 112 sheets, 108 lb., f.o.b. Wales 33s. 6d.

Ferromanganese, £26 10s. for British consumption.

On other products control prices per gross ton are:

Hematite pig iron, East Coast, £6 2s. 6d.; West Coast, £6 7s. 6d.

Cleveland pig iron No. 1, £4 19s.; other grades, £4 15s. 9d. for basic. Domestic prices, 9s. 3d. below these figures.

Steel plates, ship, bridge and tank, £11 10s. to £17, according to size.

Boiler plates, basis, £12 10s.

Bar iron, standard quality, basis £14 15s.; marked £17 net.

Sheet and tin plate bars, £10 7s. 6d.

Blooms and billets for rerolling (ordinary), £10 7s. 6d.; special quality, £11.

Wire rods, £21 10s. net, basis.

Cleveland

CLEVELAND, Nov. 26.

Iron Ore.—Lake Superior ore producers are preparing data showing present costs and average selling prices to submit to the American Iron and Steel Institute and War Industries Board at their meeting Dec. 11. These costs will include an increase of about 10 per cent in the cost of labor since the last cost data were prepared. This increase is due to the adoption of the basic 8-hour day on Oct. 1 and its time-and-half pay for overtime work provision. It is expected that the cost data will be used as an argument against any possible reduction in ore prices, should this matter be taken up at that time. With the exception of a few cargoes, the ore shipping season is over. Some of the boats were delayed last week by bad weather and will not arrive down with their last cargoes as soon as they expected, but it is probable that the last shipments will be made by the end of the week. We quote delivered lower Lake ports as follows:

Old range Bessemer, $6.65; old range non-Bessemer, $5.90; Mesaba Bessemer, $6.40; Mesaba non-Bessemer, 5.75.

Pig Iron.—The War Industries Board has taken a definite stand that it will not take a hand in adjusting or cancelling a contract between the pig iron producer and consumer for pig iron allocated by the Government for Government work which has been cancelled. The pig iron committee brought the matter of cancellations to the attention of J. L. Replogle, Director of Steel Products, to whom was referred a cancellation request. He replied that the Government had no jurisdiction in the matter, that it was strictly a commercial transaction between the seller and buyer and should be handled as it is customary to handle other pig iron

contracts. Sellers appear to generally agree that cancellations are to be resisted. This does not mean that no cancellations will be allowed. Instead, it is the apparent purpose of the producers to handle each case of request for cancellation on its merits and to avoid wholesale cancellations by consumers whose Government orders are cancelled. A few cancellations of contracts made recently were allowed during the week. Government requests for cancellations of iron are still reaching the pig iron committee, but in decreasing amount and in small lots. During the week, there were 70 to 80 allocations aggregating about 32,000 tons. These include 10,000 tons of low phosphorus iron, 11,000 tons of foundry, 8000 tons of basic, 1000 tons of malleable and 800 tons of charcoal iron. Total allocations since the committee began its work May 1 amount to 1,840,000 tons. There are now about 35 lots in the hands of the committee for allocation. The demand at present from the Government is almost wholly for the Food Administration and Railroad Departments. However, one lot of 12,000 tons of basic iron for the Ordnance Department for the first four months of next year is up for allocation, but there is a possibility that this will not be required. There is moderate buying of pig iron for the first half delivery, mostly in foundry grades, although some recent sales of malleable and basic iron have been made, with the usual form of price revision contract. Director Replogle has advised furnaces to make their monthly reports for November. Some producers were under the impression that these reports would no longer be required. We quote delivered Cleveland as follows:

Bessemer	$36.60
Basic	33.40
Northern No. 2 foundry	34.40
Southern No. 2 foundry	39.00
Malleable	33.40
Ohio silvery, 8 per cent silicon	49.90
Standard low phosphorus, Valley furnace	53.00

Finished Iron and Steel.—Automobile manufacturers continue to make plans to get under headway for the manufacture of passenger cars and are placing orders with various parts manufacturers, and the latter are placing liberal orders with the mills for forging, spring and rim steel. The Ford Motor Co. is distributing orders for parts for a production schedule of 1000 cars per day, but it is expected that it will take until about Jan. 1 to get production well under way in the automobile field. Two local automobile plants that had large orders for Government trucks canceled are turning their plants over rapidly to the manufacture of their regular lines. Outside of the automobile field a fair volume of business is coming out in most finished lines. Cancellations and suspensions of material ordered for Government work have fallen off in number. Mills are urging buyers to change their specifications whenever possible instead of canceling orders. Some mills have not had their orders canceled and consequently do not know how soon they will be able to supply the commercial trade, but are willing to take commercial orders subject to their ability to fill. This is not found very satisfactory, as buyers want definite delivery promises. One local mill had its supply of billets cut off with the cancellation of its shell orders, so that it is left temporarily in an uncomfortable situation. That shell steel is still being produced in large quantities is indicated by a shipment of 90 carloads to a Cleveland forge shop by a Chicago district mill one day last week. The Government has ordered an Ohio naval gun manufacturer to suspend work, this suspension also covering the gun orders for gun steel. Consumers are asking mills to release structural material and plates held up when their entire output was diverted to Government needs, but some of the mills are still tied up with Government tonnage and can as yet make no promises on these commercial orders. However, there is a gradual easing up in the situation. Tank shops are inquiring freely for oil tank work which has been held up for lack of material, and new inquiry from this source aggregates 3000 tons. Owing to the easing up of the steel bar situation, the outlook for bar iron business is not promising, as consumers are expected to call for lower-priced material. Semi-finished steel is also easing up and considerable inquiry for both billets and sheet bars is coming out, one being for 5000 tons per month for the first quarter. New commercial demand for sheets is active, although some consumers are showing hesitancy about placing orders, thinking that prices may go lower. With sheet bars more plentiful, it is expected that the supply of sheets will soon be adequate to meet all demands.

Steel bars, 4.07c.; plates, 4.42c.; structural material, 4.17c.; No. 10 blue annealed sheets, 5.42c.; No. 29 black sheets, 6.42c.; No. 28 galvanized sheets, 7.67c.

Bolts, Nuts and Rivets.—New demand for bolts and nuts is rather light, although some inquiry is now coming from manufacturers for use in products that have heretofore been placed in a non-essential line, including the manufacture of passenger automobiles. Some cancellations are reported both from jobbers and from manufacturers who have had indirect Government orders. There is practically no new inquiry for rivets, but specifications continue to come in good volume from the shipyards.

Old Material.—The scrap market is still marking time. Transactions are so few that there is about as much uncertainty regarding prices as a week ago. Prices on heavy melting steel, borings and turnings are on about the same level as last week, but revisions downward have been made on a few other grades. A Valley interest is inquiring for 2000 tons of borings for blast furnace use, but aside from this, consumers are staying out of the market. A very limited amount of trading is reported between dealers who are covering on old contracts. Some dealers expect prices to remain about as they are until contracts are cleaned up at the end of the year. Scrap in considerable quantities is coming on the market. One of the leading Detroit automobile companies, which has been marketing its material through dealers, is now offering its scrap direct to consumers. Some additional cancellations are reported, these apparently being heaviest in low phosphorus melting scrap. The trade is still handling material under the Government classifications, and as these regulations were made for the fourth quarter, it is not expected that they will be removed before Jan. 1. We quote prices at consumers' yards in Cleveland and vicinity as follows:

Per Gross Ton

Steel rails	$28.00 to $29.00
Steel rails, under 3 ft	32.00 to 33.00
Steel rails, rerolling	33.50 to 34.00
Iron rails, nominal	39.00
Iron car axles, nominal	46.50
Steel car axles, nominal	46.50
Heavy melting steel	27.50 to 28.00
Cast borings	17.50 to 18.00
Iron and steel turnings and drillings	17.50 to 18.00
Compressed steel scrap	26.00 to 26.50
No. 1 railroad wrought	32.00 to 33.00
Cast iron car wheels, unbroken, nominal	39.00
Cast iron car wheels, broken, nominal	34.00
Agricultural malleable	26.00 to 27.00
Railroad malleable	32.00 to 33.00
Steel axle turnings	22.00 to 22.50
Light bundled sheet scrap, nominal	24.50 to 25.00
Cast iron scrap, nominal	29.00
Cast iron scrap, broken to cupola size	31.50 to 32.50
No. 1 busheling	26.75 to 27.00
Railroad grate bars, nominal	25.25 to 25.75
Stove plate, nominal	25.25 to 25.75

The present maximum price of spelter in Germany is 66m. per 100 kg., in addition to which the makers are entitled to make a surcharge of 12m. for orders taken between Oct. 1, 1917, and March 31, 1918, and of 18m. per 100 kg. for orders accepted since March 31, 1918.

The erection of a large air nitrate plant for the Government near Toledo, Ohio, has not been abandoned because of the ending of the war, but construction work has been slowed down. It is announced that various changes will be made in the plans, but that these changes are only to a minor extent influenced by the ending of the war.

The five thousandth Liberty motor built by the Packard Motor Car Co. was shipped Nov. 21, a week after its final assembly in the Packard shops.

Metal Markets

The Week's Prices

Cents Per Pound for Early Delivery

	Copper, New York		Tin,	Lead		Spelter	
		Electro-	New	New	St.	New	St.
Nov.	Lake	lytic	York	York	Louis	York	Louis
20	26.00	26.00	74.00	8.05	7.75	8.50	8.15
21	26.00	26.00	73.00	8.05	7.75	8.50	8.15
22	26.00	26.00	72.00	8.05	7.75	8.55	8.20
23	26.00	26.00	....	8.05	7.75	8.60	8.25
25	26.00	26.00	71.00	8.05	7.75	8.65	8.25
26	26.00	26.00	71.00	8.05	7.75	8.65	8.30

NEW YORK, Nov. 27.

Most of the markets continue under control and all are more or less in the transition stage. The copper market depends on the future regulation policy of the Government. The tin market is greatly restricted. Lead is still under control. Spelter is more active and higher. Antimony has turned stronger.

New York

Copper.—A combination of American copper producing and selling companies is under consideration to control export sales of copper, this being regarded as permissible under the Webb law. The incentive for this organization has been the reported combination of the principal foreign interests to regulate purchases. No details of the American plans are available. Demand for domestic uses is appearing here and there, but the volume thus far is not large. Distribution and control are still in the hands of the Copper Producers Committee with the price fixed at 26c. until Jan. 1. It is understood that a meeting is scheduled for about the middle of December to discuss with Government authorities the question of future control. The whole situation rests on the outcome of this meeting. Reports of sales of copper under the fixed price recently are said to refer only to sales of casting copper. This grade has for some time sold under the Government price.

Tin.—The only market in tin is for such lots as are for resale and this is of course not a large one. There have been fair transactions of this nature with the values gradually declining from 75c., New York, a week ago, to 71c. yesterday. These consist mostly of Straits and Banca tin. Without doubt stocks of the metal in the hands of consumers are large and now that most restrictions are removed, offerings may be more liberal. The fact that future buying for importation is still under international control has opened up a very interesting situation, full of perhaps sensational developments. How long such regulation will continue is not certain, its necessity being denied in important circles. Tin arrivals at Pacific ports thus far in November have been 1975 tons, with only 100 tons at Atlantic ports. The London market on Monday was £300 per ton for futures, which is 68c. per lb. in London at $4.75½ for exchange.

Lead.—The market continues under the control of the Lead Producers' Committee with prices fixed at 7.75c., St. Louis, or 8.05c., New York. It is not unlikely that this metal will be the first of the non-ferrous group to be released from regulation as the restrictions are voluntary. This is not likely to happen until the supply is ample, which will probably not be very soon.

Spelter.—There has been a fair amount of buying of prime Western for domestic use, principally by galvanizers, and also for export, and the market has firmed appreciably. For early delivery prime Western is quoted at 8.30c., St. Louis, or 8.65c., New York. Inquiry continues good. For first quarter the quotation is 8c., St. Louis, or 8.35c., New York.

Antimony.—The market is stronger but quiet, at higher levels than last week on improved demand. For wholesale lots for early delivery the quotation is 8.50c. to 8.75c., New York, duty paid.

Aluminum.—Maximum Government prices for No. 1 virgin metal and for scrap continue at 33c. per lb. for 50-ton lots, 33.10c. per lb. for 15 to 50-ton lots and 33.20c. per lb. for 1 to 15-ton lots.

Old Metals.—Market is unsettled and prices are lower. Transactions are few and far between. Dealers' selling prices are nominally as follows:

	Cents Per Lb.
Copper, heavy and crucible	17.00
Copper, heavy and wire	23.50
Copper, light and bottoms	20.00
Brass, heavy	16.00
Brass, light	12.00
Heavy machine composition	14.00
No. 1 yellow rod brass turnings	14.00
No. 1 red brass or composition turnings	20.00
Lead, heavy	7.50
Lead, tea	5.75
Zinc	6.25

Chicago

Nov. 26.—Cancellations are reported, but most of them affect deliveries so far in the future that but little harm is done. Copper buying is closer because of a belief that prices may come down early next year. A fair business has been done in lead and antimony, with the latter showing a little more strength. There is no disposition to buy any metals for next year. We quote copper at 26c. for carloads and 27.30c. for part carloads; tin, 75c. to 77c.; lead, nominal at 7.85c. in carloads; 8.35c. per pound for 1 to 25 tons and 8.60c. per pound for less than 1 ton; spelter, 8.50c.; antimony, 10.50c. to 11c.. On old metals we quote copper wire, crucible shapes, 18.49½c.; copper clips, 17.50c.; copper bottoms, 16c.; red brass, 17.50c.; yellow brass, 1.50c.; lead pipe, 5c.; zinc, 4.50c.; pewter, No. 1, 35c.; tinfoil, 40c., and block tin, 45c.

St. Louis

Nov. 25.—Some decided recessions have taken place, except in lead and spelter, which are still under control. We quote lead in carload lots, 7.75c.; spelter, 8.10c., November delivery. In less than carload lots the quotations are: Lead, 8.25c. to 8.50c., according to quantity above or below the one-ton limit; spelter, 9.50c.; tin, 75c. to 80c.; antimony, Asiatic, 10½c. In the Joplin district transactions in zinc ore were somewhat limited because of the uncertainties of the domestic situation following the cessation of hostilities. Top grade ore sold at $75 per ton for zinc blende, basis of 60 per cent metal, while second grades were pegged at $56.50, the average for the week for the district being $58. Calamine was quiet at $30 to $40, basis of 40 per cent metal, with the average for the week $38. Lead ore was steady at $100, basis of 80 per cent metal. On miscellaneous scrap metals we quote dealers' buying prices as follows: Light brass, 9c.; heavy yellow brass, 12c.; heavy red brass and light copper, 15c.; heavy copper and copper wire, 17c.; pewter, 50c.; tinfoil, 55c.; zinc, 5c.; lead, 5.50c.; tea lead, 4.50c.; aluminum, 19c.

The Pennsylvania Electrical Repair Co., Pittsburgh, recently incorporated, does not expect to build a plant. It is now occupying four floors and a basement of the building at 412 First Avenue, which has the necessary equipment for handling all kinds of electrical repair work. The company rewinds armatures and makes armature coils of all descriptions.

The Wickwire Steel Co., Buffalo, has deposited the necessary funds with the Bankers' Trust Co., New York, for the purchase of 50,000 of its 6 per cent gold bond mortgage issue.

Peter B. Olney, Jr., has been appointed receiver for the American Brass Forging Co., 168 Southern Boulevard, New York.

Creditors of the Industrial Foundry & Machine Co., Pottstown, Pa., have filed a petition asking to have the company declared an involuntary bankrupt.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

Freight rates from Pittsburgh on finished iron and steel products, including wrought iron and steel pipe, with revisions effective Nov. 1, 1918, in carloads, to points named, per 100 lb., are as follows: New York, 27c.; Philadelphia, 24.5c.; Boston, 30c.; Buffalo, 17c.; Cleveland, 17c.; Cincinnati, 23c.; Indianapolis, 25c.; Chicago, 27c.; St. Louis, 34c.; Kansas City, 59c.; St. Paul, 49½c.; Denver, 99c.; Omaha, 59c.; minimum carload, 36,000 lb. to four last named points; New Orleans, 38.5c.; Birmingham, 57.5c.; Pacific Coast, $1.25; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is $1.315, minimum carload 40,000 lb.; and $1.25, minimum carload 50,000 lb. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 50c. per 100 lb., minimum carload 46,000 lb.; to Omaha, 50c., minimum carload 46,000 lb.; to St. Paul and Minneapolis, 49.5c., minimum carload 46,000 lb.; Denver, 99c., minimum carload 46,000 lb. A 3 per cent transportation tax applies. On iron and steel items not noted above, rates vary somewhat and are given in detail in the regular railroad tariffs.

Structural Material

I-beams, 3 to 15 in.; channels, 3 to 15 in. angles, 3 to 6 in. on one or both legs, ¼ in. thick and over, and zees, structural sizes, 3c.

Wire Products

Wire nails, $3.50 base per keg; galvanized, 1 in. and longer, including large-head barb roofing nails taking an advance over this price of $2, and shorter than 1 in., $2.50. Bright basic wire, $3.35 per 100 lb.; annealed fence wire, Nos. 6 to 9, $3.25; galvanized wire, $3.95; galvanized barb wire and fence staples, $4.35; painted barbed wire, $3.65; polished fence staples, $3.65; cement-coated nails, $3.40 base; these prices being subject to the usual advances for the smaller trade, all f.o.b. Pittsburgh, freight added to point of delivery, terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 47 per cent off list for carload lots, 46 per cent for 1000-rod lots, and 45 per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large structural and ship rivets.....$4.40 base
Large boiler rivets $4.50
7/16 in. x 6 in. smaller and shorter rivets..50-10 per cent off list

Machine bolts h.p. nuts, ⅜ in. x 4 in.:
Smaller and shorter, rolled threads....50-10-5 per cent off list
Cut threads .....50-5 per cent off list
Larger and longer sizes.....40-10 per cent off list

Machine bolts, c.p.c. and t. nuts, ⅜ in. x 4 in.:
Smaller and shorter.....40-10 per cent off list
Larger and longer.....35-5 per cent off list

Carriage bolts, ⅜ x 6 in.:
Smaller and shorter, rolled threads.....50-5 per cent off list
Cut threads .....40-10-5 per cent off list
Larger and longer sizes.....40 per cent off list
Lag bolts .....50-10 per cent off list
Plow bolts, Nos. 1, 2, 3.....50 per cent off list
Hot pressed nuts, sq., blank.....2.50c. per lb. off list
Hot pressed nuts, hex., blank.....2.30c. per lb. off list
Hot pressed nuts, sq., tapped.....2.30c. per lb. off list
Hot pressed nuts, hex., tapped.....2.10c. per lb. off list
Cold punched t. sq. and hex. nuts, blank....2.25c. per lb. off list
Cold punched t. sq. and hex. nuts, tapped....2.00c. per lb. off list

Semi-finished hex. nuts:
⅝ in. and larger.....60-10-10 per cent off list
½ in. and smaller .....70-5 per cent off list
Square bolts .....70-10 per cent off list
Stove bolts .....2½ per cent extra for bulk
Tire bolts .....50-10-5 per cent off list

The above discounts are from present lists now in effect. All items carry standard extras.

Wire Rods

Common basic or Bessemer rods to domestic consumers, chain rods, $65; screw, rivet and bolt rods and rods of that character, $65. Prices on high carbon are irregular. They range from $70 to $80, depending

Railroad Spikes and Track Bolts

Railroad spikes 9/16 in. x 4½ in. and heavier, per 100 lb., f.o.b. mills, kegs of 200 lb. each, or more; track bolts, Boat spikes, $5.25 per 100 lb., f.o.b. Pittsburgh.

Terne Plate

Prices May 21 prices on all sizes of terne plates are as follows: 8-lb. coating, 200 lb., $15 per package; 8-lb. coating, 12-lb. coating, I. C., $17.00; 15-lb. coating, I. C., 20-lb. coating, I. C., $19.60; 25-lb. coating, I. C., 30-lb. coating, I. C., $21.75; 35-lb. coating, I. C., 40-lb. coating, I. C., $24.00 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.90c. from mill. Refined iron bars, 5.00c.; common iron bars, 3.50c. in carload and larger lots, f.o.b. mill.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card, as announced Nov. 5 by the Government on steel pipe, those on iron pipe being the same as quoted for some time:

Butt Weld

Steel: Inches	Black	Galv.	Iron: Inches	Black	Galv.
⅛, ¼ and ⅜	44	17½	⅛ and ¼	23	+4
½	48	33½	⅜	24	+3
¾ to 3	51	37½	½	28	10
			¾ to 1½	33	17

Lap Weld

2	44	31½	1¼	18	3
2½ to 6	47	34½	1½	25	11
7 to 12	44	30½	2	26	12
13 and 14	34½	..	2½ to 6	28	15
15	32	..	7 to 12	25	12

Butt Weld, extra strong, plain ends

⅛, ¼ and ⅜	40	22½	⅛, ¼ and ⅜	22	5
½	45	32½	½	27	14
¾ to 1½	49	36½	¾ to 1½	33	18
2 to 3	50	37½			

Lap Weld, extra strong, plain ends

2	42	30½	1¼	19	4
2½ to 4	45	33½	1½	25	11
4½ to 6	44	32	2	27	14
7 to 8	40	26½	2½ to 4	29	17
9 to 12	35	21½	4½ to 6	28	16
			7 to 8	20	8
			9 to 12	15	3

To the large jobbing trade an additional 5 per cent is allowed over the above discounts, which are subject to the usual variations in weight of 5 per cent. Prices for less than carloads are four (4) points lower basing (higher price) than the above discounts on black and 5½ points on galvanized.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers are seven (7) points lower (higher price) than carload lots, and on butt and lap weld galvanized iron pipe are nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots, f.o.b. Pittsburgh, announced Nov. 13, as agreed upon by manufacturers and the Government:

Lap Welded Steel		*Charcoal Iron*	
3½ to 4½ in.	34	3½ to 4½ in.	12½
2½ to 3¼ in.	24	3 to 3¼ in.	+ 5
2¼ in.	17½	2½ to 2¾ in.	+ 7½
1¾ to 2 in.	13	2 to 2¼ in.	+22½
		1¾ to 1⅞ in.	+35

Standard Commercial Seamless—Cold Drawn or Hot Rolled

	Per Net Ton		Per Net Ton
1 in.	$340	1¾ in.	$220
1¼ in.	280	2 to 2½ in.	190
1⅜ in.	270	2¾ to 3¾ in.	180
1½ in.	220	4 in.	200
		4½ to 5 in.	220

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiation.

Sheets

Makers' price for mill shipments on sheets of United States standard gage in carload and larger lots are as follows:

	Cents per lb.
Blue Annealed—Bessemer	
No. 8 and heavier	4.20
Nos. 9 and 10	4.25
Nos. 11 and 12	4.30
Nos. 13 and 14	4.35
Nos. 15 and 16	4.45
Box Annealed, One Pass Cold Rolled—Bessemer	
Nos. 17 to 21	4.80
Nos. 22 and 24	4.85
Nos. 25 and 26	4.90
No. 27	4.95
No. 28	5.00
No. 29	5.10
No. 30	5.20
Galvanized Black Sheet Gage—Bessemer	
Nos. 10 and 11	5.25
Nos. 12 and 14	5.35
Nos. 15 and 16	5.50
Nos. 17 to 21	5.65
Nos. 22 and 24	5.80
Nos. 25 and 26	5.95
No. 27	6.10
No. 28	6.25
No. 29	6.50
No. 30	6.75
Tin-Mill Black Plate—Bessemer	
Nos. 15 and 16	4.80
Nos. 17 to 21	4.85
Nos. 22 to 24	4.90
Nos. 25 and 27	4.95
No. 28	5.00
No. 29	5.05
No. 30	5.05
Nos. 30½ and 31	5.10

PERSONAL

J. W. Powell, vice-president Bethlehem Steel Corporation, was elected vice-president of the National Society of Naval Architects and Marine Engineers at its twenty-fifth annual session at Philadelphia, Nov. 14.

G. C. Thayer, formerly connected with the William Cramp & Sons Ship & Engine Building Co., Philadelphia, has become general manager of the Merchants Shipbuilding Corporation, Harriman, Pa., succeeding W. T. Smith.

William W. Lewis has resigned as superintendent of the Western Reserve works of the Brier Hill Steel Co. at Warren, Ohio, and has been succeeded by Abner Hughes, formerly assistant superintendent.

Charles A. Fisher has been appointed assistant to the president of the Jones & Laughlin Steel Co., Pittsburgh. He is a director of the company and was formerly treasurer. In this latter capacity he is succeeded by James C. Watson, heretofore assistant treasurer. William J. Creighton, formerly auditor, has been appointed controller.

Dr. Sidney R. McCurdy, formerly chief surgeon of the Youngstown Sheet & Tube Co., now with the 18th Infantry in France, has been cited for bravery under fire. He was among the first to enlist at Youngstown.

At the organization meeting of the board of directors of the Crucible Steel Company of America held Nov. 21, the following officers were re-elected: Herbert DuPuy, chairman; O. H. Wharton, president; H. A. Brown, J. W. Dougherty, George W. Sargent, John A. Sutton and George A. Turville, vice-presidents; George A. Turville, secretary and treasurer; A. A. H. Niebaum, J. M. McComb and H. F. Kress, assistant treasurers; H. F. Kress and E. W. Reed, assistant secretaries; N. W. Nolen, comptroller; G. A. M. King, auditor; H. H. Stewart and H. L. Gellinger, assistant auditors.

Important promotions have been made at several shipbuilding plants of the Bethlehem Steel Corporation. S. W. Wakeman, general manager of the Quincy and Squantum works of the Fore River plant, at Quincy, Mass., has been made general manager of the Buffalo, Providence, Quincy and Squantum works of the Fore River plant, making his responsibilities greater than those of any other general manager of the corporation and placing him in command of 30,000 shipbuilders. E. H. Ewertz, who has been superintendent of the Squantum works since its establishment, becomes general manager of the Moore plant of the corporation at Elizabeth, N. J. W. H. Benson, superintendent of hull construction at the Quincy works, has been appointed general superintendent at the Squantum works. H. E. Gould, superintendent of machinery at the Quincy works, becomes general superintendent of the works. E. B. Germain, manager of the Moore plant, Elizabeth, N. J., becomes general manager of the Harlem plant, succeeding Joseph Weaver. Mr. Weaver's resignation to become vice-president of the Pullman Co. precipitated the change.

E. L. Garrihan, for the past 20 years connected with the manufacturing and sales departments of the Bethlehem Steel Co., has resigned to become manager of sales for the Tioga Steel & Iron Co., Philadelphia.

C. W. Stephens has been appointed manager of sales of the Detroit Twist Drill Co., Detroit, succeeding Nelson J. Smith, who becomes assistant to President Muir B. Snow.

Harry E. Blackwell, who has been in Cleveland the past four months assisting the Committee on Pig Iron, Iron Ore and Lake Transportation, has returned to Detroit and assumed his regular duties as manager of the Detroit sales office of Pickands, Mather & Co.

J. C. Agnew, general superintendent Mahoning Ore & Steel Co., Hibbing, Minn., has been appointed an assistant to A. C. Dinkey, president Midvale Steel & Ordnance Co., Cambria Steel Co. and Mahoning Ore & Steel Co., succeeding the late H. F. Black.

Andrew Carnegie celebrated his eighty-third birthday on Monday at his home in New York. He passed the day quietly, taking a short automobile ride in the morning. He received many congratulatory telegrams.

John McConnell, who for a number of years has been in charge of alloy and special steel production for the United Alloy Steel Corporation, Canton, Ohio, has severed that connection and on Nov. 15 assumed similar duties with the Interstate Iron & Steel Co., Chicago.

General Pacific Coast service of the Chicago Pneumatic Tool Co. has been established by B. H. Tripp at San Francisco, Los Angeles, Portland, Seattle and Phoenix, Ariz. Mr. Tripp has been put in charge as district manager of sales.

John W. Fairbanks has resigned as general superintendent of the Fairbanks Steam Shovel Co., Marion, Ohio, and accepted the position of general sales manager of the Barker Winchless Chuck Co., Chicago.

W. S. Hovey, for five years general manager of the Fairbanks-Morse Mfg. Co.'s Eclipse works in Beloit, Wis., has been elected a vice-president of the company, to be in charge of manufacturing at Beloit, Wis.; Baltimore, Md.; Three Rivers, Mich., and Indianapolis, Ind. He assumed his new duties Nov. 15, transferring his headquarters from the Beloit works to the general offices in Chicago.

I. H. Mills, who has been associated with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., for the past 23 years, has resigned to become superintendent of the Sperry Gyroscope Co., Brooklyn, N. Y. He began his career with the Westinghouse company as a machine operator, eventually becoming superintendent of the small industrial motor department.

The Purchasing Agents' Association of Pittsburgh, at its annual meeting Nov. 19, re-elected as president Guy D. Leopold, Edgewater Steel Co.; treasurer, Charles W. Forcier, Mackintosh, Hemphill & Co.; secretary, S. H. Miller, Draeger Oxygen Apparatus Co. New officers elected were: First vice-president, C. W. Lepper, Pittsburgh Railways Co.; second vice-president, William A. Forrester, Westinghouse Air Brake Co., and the following directors for a two-year term: E. L. McGrew, Standard Underground Cable Co.; D. E. Ferguson, H. K. Porter Co.; Clarence T. Stewart, Harbison-Walker Refractories Co.; Harry O. Eichleay, John Eichleay, Jr., Co., and F. R. Anderson, National Malleable Castings Co.

J. D. Apgar, formerly with the Vandyck-Churchill Co., Singer Building, New York, is now associated with the Machine Tool Engineering Co., 149 Broadway, New York.

Charles M. Schwab, director general of the Emergency Fleet Corporation and chairman Bethlehem Steel Corporation, will deliver an address in Youngstown, Ohio, in the near future. Arrangements for the date are now being made by J. G. Butler, Jr.

Henry A. Butler, formerly in charge of the cost department of the Youngstown Sheet & Tube Co., reached France recently for a year's service with the Red Cross.

William B. Curtis, captain in the Ordnance Department, formerly in the Youngstown Sheet & Tube Co.'s sales department, sailed last week for Europe. He served for 15 months in Washington.

J. F. King has resigned as secretary of the Relief Association of the Youngstown Sheet & Tube Co. to become assistant to Warren F. Perry, recently appointed manager of the newly created industrial relations department of the Brier Hill Steel Co. Mr. King was with the Youngstown Sheet & Tube Co. 10 years, formerly as claim agent. He will be succeeded in the Relief Association by Samuel Crosby, assistant paymaster. Mr. King was presented a gold watch and chain by his associates.

Walter Meub, secretary to James A. Campbell, president Youngstown Sheet & Tube Co., has been named chairman of a committee to find employment for soldiers and sailors from Mahoning County partially disabled. Employers have signified their willingness to afford

employment, not only for men partly incapacitated, but for all returning soldiers.

H. T. Johnson has resigned as secretary to the superintendent of the open-hearth steel works, Republic Iron & Steel Co., Youngstown, to become assistant to George W. Peffer, general manager of the Donner Steel Co., Buffalo. Mr. Johnson has been with the Republic company 10 years. He was presented with a gold watch, chain and charm by his associates.

Harry E. Higgins, who has long been a director and the vice-president of the Otis Steel Co., Cleveland, has tendered his resignation, to become effective Dec. 31.

Major Paul Debevoise has returned from France, where he has been with the American Expeditionary Forces, but has not yet retired from the service.

MANY FOREIGN INQUIRIES

Youngstown Mills Considering Export Business —Some Cancellations

YOUNGSTOWN, OHIO, Nov. 25—(*By Wire*).—In the Youngstown district mills are getting inquiries for finished and semi-finished steel products, not only from the domestic commercial trade but from foreign countries as well. Inquiries are being received from South America and Japan, and in smaller volume from Cuba and the Philippine Islands.

Both the British and French governments have exercised substitute clauses in their contracts for munition steel and steel for war uses of various kinds. They are asking instead rods, wire and shapes, as well as sheets and plates.

Some orders for shell rounds have been suspended by the United States Government, but general suspensions and cancellations are not looked for by Valley producers until about Dec. 1.

Indication of the purpose of France to obtain American steel is evidenced in the fact that a contract calling for 5250 metric tons of barbed wire was recently suspended in the district and in its stead 5000 tons gross of semi-finished material was substituted. The original contract, it is understood, provided that it could be canceled with the ending of hostilities, but the French Government ordered the substitute material in its place.

The Italian Government is sending out inquiries for steel products of all kinds.

Channels, bars, rods, strip steel and small shapes are in demand by the automobile industry.

The outlook for the Brier Hill Steel Co., which has been one of the heaviest makers of shell rounds and projectile steel in the district, is especially promising, sales official states. It is understood the company has booked no less than 50 separate orders for plates for delivery at various periods next year. The 84-in. mill is scheduled to start within a week. At first only small stock will be rolled until the mill is "unlimbered." Included in the orders are some from the United States Government for ship plates.

Leading makers of pipe, wire, nails and sheets are now filling jobbers' orders as much as possible and using discretion in distribution. In one or two scattered cases jobbers have attempted to cancel existing contracts for sheets, or have them temporarily suspended, but this action has been vigorously opposed by the makers, who have advised them that any such attempts will be strongly resisted.

Officials of the Petroleum Iron Works Co., Sharon, Pa., state the company has tentative orders for fabrication of plates to insure maximum operation for the next few months. By use of special machinery, heavy plates, up to 30 ft. in length, are bent to meet the United States Shipping Board requirements.

Orders are being placed in small volume by South American countries for such products as wire and nails. A typical instance is one for 2000 reels of wire.

The name of the Garland Nut & Rivet Co., West Pittsburgh, Pa., has been changed to the Garland Mfg. Co.

IRON AND STEEL STOCKS

Long Stock Holdings Reduced—War Contract Cancellations Cause Drop in Quotations

NEW YORK, Nov. 25.

A return of market activity, limited by credit restrictions, set in the latter part of last week with a gradual return to the market of long stock holdings originally acquired for an expected rise following the signing of the armistice. Steel company shares remained almost stationary; but a number of metal-working companies fell off several points, reflecting the heavy cancellation of war contracts.

The range of prices on active iron and industrial stocks from Tuesday of last week to Wednesday of this week was as follows:

Allis-Chalm. com.	24¼ - 27½	Lackaw. steel ..	71 - 73¾
Allis-Chalm. pf..	79¾ - 81¾	Lake Supr. Corp.	16¼ - 17½
Am. Can com...	40¾ - 45⅝	Lima Loco.	43½ - 44
Am. Can pf.....	96 - 96½	Midvale Steel ..	42⅜ - 44⅜
Am. Car & F. c.	79½ - 84⅛	Nat.-Acme	40⅜ - 44⅛
Am. Car & F. pf.	107 -108	Nat. En. & Stm. c.	88
Am. Loco. com..	60½ - 65½	N. Y. Air Brake.	104 -107
Am. Loco. pf....	100¼-100½	Nova Scotia Steel.	59
Am. Ship com...	104¾-105½	Pittsbg. Steel pf.	91¾
Am. Steel Fdries.	88 - 94¼	Pressed Steel c..	55 - 63
Bald. Loco. com.	72¼ - 81¼	Ry. Stl. Spring c.	65¼ - 69⅜
Beth. Steel com.	62 - 65¾	Ry. Stl. Spg. pf..	102 -104
Beth. Stl. Cl. B.	61¾ - 66⅝	Republic com. ..	74⅜ - 78½
Case (J. I.) pf....	90⅛	Republic pf.....	99¼ - 99¾
Central Fdry. com.	18	Sloss com.	45 - 48
Chic. Pneu. Tool.	65 - 66¼	Superior Steel ..	34⅞ - 37
Colo. Fuel	35¼ - 39	Transue-Williams	37 - 39¾
Cruc. Steel com..	54¼ - 58	Un. Alloy Steel..	38½ - 39⅞
Crucible Steel pf.	89¼ - 95	U. S. Pipe com..	13 - 14⅛
Gen. Electric ...	147 -152¼	U. S. Steel com..	98⅝-102¼
Gt. No. Ore Cert.	32⅛ - 34	U. S. Steel pf...	110¾-111⅞
Gulf States Steel	63 - 68	Va. I. C. Coke....	60
Gulf S. Stl. 1st pf.	95½	Warwick	8½
Int. Har. com...	108¾-115	Westingh. Elec..	41¼ - 43⅝
Int. Har. pf.....	114		

The Cambria Steel Co., quarterly, 75c. and extra 75c., payable Dec. 14.

The Crucible Steel Co., quarterly, 1¾ per cent on the preferred, payable Dec. 20.

The Dominion Iron & Steel Co., quarterly, 1¾ per cent on the preferred, payable Jan. 1.

The Dominion Steel Corporation, quarterly, 1½ per cent on the common, payable Jan. 1.

The Great Northern Iron Ore Properties, semi-annual, $2, payable Dec. 17.

The Gulf States Steel Co., quarterly, 2½ per cent on the common, 1¾ per cent on the first preferred, and 1½ per cent on the second preferred, all payable Jan. 2.

Pig Iron Producers Canvass the Situation

An optimistic view of the pig iron situation was taken by the producers at a largely attended meeting of the central district of the American Pig Iron Association held in Cleveland, Nov. 20. A canvass of the situation brought out the fact that pig iron producers generally have on their books very few direct contracts with the Government departments and therefore have not experienced and do not expect to experience any material reduction in the demand for their iron. The members report that practically no iron is being stocked at the furnaces and consumers are taking iron freely on contracts. It was brought out in the discussion among the members that a large percentage of the foundries have not covered for their first half of 1919 iron on their requirements of material to be used in making their regular line of products. This was said to be especially true in respect to products in the so-called non-essential class because contracts for pig iron heretofore could not be made without the buyer making the pledge required by the War Industries Board that the iron should be used only for Government requirements.

The reports of the association show that the furnaces of the central district are more than 92 per cent sold up to July 1 next year. In the opinion of the producers all this iron will be required by the purchasers and the demand for peace time requirements now that restrictions have been modified will cause further purchases by consumers.

First Moves Toward Reconstruction

(*Continued from page* 1345)

tions of equipment of the same type which they were employing for peace production. In but few cases have Chicago manufacturers invested large sums on equipment unsuited to their regular line of production and which will have to be scrapped when existing war contracts have been completed.

"On the assumption, therefore, that war contracts will be gradually canceled, and men released from the Army in the same manner, it is entirely possible to predict that our manufacturers can immediately utilize whatever capacity is released from Government requirements upon the production of their regular line of manufacture. From the best information obtainable it apparently is the intention of the Government to release our soldiers and cut down Government contracts in a gradual manner.

"The situation with respect to raw materials does not seem to present any insurmountable difficulties. The War Industries Board has announced that as fast as raw material is released from Government requirements it will be equitably apportioned among the industries in accordance with their individual needs.

"What will be the attitude of labor is the one big problem for which no one seems to know the answer. Recent pronouncements of labor leaders indicate that labor will strongly resist any readjustment in wages, should this become necessary. Among some manufacturers this attitude has given rise to the fear that labor disturbances will be a heritage of the war. Organizations representing manufacturers have made it clear that the manufacturers do not desire to force labor to accept less than is its due, but that the manufacturers wish to co-operate with labor in making whatever readjustments economic conditions may demand. One unknown factor in this problem apparently has not been given the attention it deserves. It must not be forgotten that labor has contributed its proportion of men to the Army and Navy. What will be the attitude of the returning soldier and sailor no one at home can foretell. It is possible that their demands may govern the situation."

Readjustment Proceeds Smoothly at Youngstown

YOUNGSTOWN, OHIO, Nov. 26.—District industries are now readjusting themselves to a peace basis with little or no difficulty. Modification of many priority rulings, with virtual abolishment of some, is taken to mean that mills are free to accept commercial business. Salesmen are drumming up trade and some substantial orders are being received, although no unusually large tonnages have been placed. The sales manager of one of the leading iron and steel corporations states contracts for pipe, wire, rods, nails and sheets are being made much as usual, with the exception that the product will go into commercial uses. The industry, it may be said, is readjusting itself according to plans outlined by the War Industries Board.

In some cases contracts have been suspended and in others canceled as a result of the Ordnance Department announcement to the effect that work should not be commenced on orders not already under way. When the armistice was signed, district mills were producing munition steel at the approximate rate of 100,000 tons a month. This is less than the aggregate output of any one of the three principal producers, Youngstown Sheet & Tube Co., Brier Hill Steel Co., or Republic Iron & Steel Co., and is about one-fourth the production of Bessemer and open-hearth furnaces in the vicinity.

Cancellations have not as yet affected operations, which are continuing as for several months past. With a certain amount of new tonnage and hold-over business, prospects for the immediate future of Youngstown plants are optimistic, and rolling mill and furnace schedules are expected to be maintained better than during the past year.

Fabricating plants, such as the Truscon Steel Co., General Fireproofing Co., Petroleum Iron Works Co., and others have their sales departments out hustling for business. All have been temporarily affected by suspension of orders. The Petroleum Iron Works Co. is filling substantial contracts for the Emergency Fleet Corporation, however, with little or no interruption.

Manufacturers are hopeful that operations may continue steady so as to interfere as little as possible with labor conditions. For this reason they believe the Government will be slow to order wholesale cancellations without providing substitute contracts. Such procedure, it is pointed out, would disrupt the industrial organization, for commercial business on the books is at present insufficient to guarantee uninterrupted schedules.

Canadian Shell Work Stopping

The cancellation of munition orders given by the United States Government to Canadian plants has been going on rapidly, as in this country, these contracts in all cases carrying cancellation provisions under which proper compensation will be paid by the Government. Canadian plants which have orders from Great Britain have been engaged in such work since the early months of the war and therefore their outlays for equipment have been well covered by depreciation charges. The Canadian forges that have been working on British shell steel have been stopped on this work and no new shell material has been taken into any of the Canadian finishing plants since Nov. 15. It has been arranged that the Canadian shell finishing plants working on British contracts continue on these until Dec. 14, up to which time their entire output will be taken under their contract, but on that date output will cease.

The Pennsylvania State Emergency Works Commission, authorized by an act of Legislature in 1917, has been organized to prepare for any work that may be necessary to undertake in the event of an industrial depression. It is composed of the Governor, Auditor General and Commissioner of Labor and Industry. Otto T. Mallery, Philadelphia, a member of the State Industrial Board, has been made secretary. The commission has been given an initial appropriation of $40,000 and is authorized to prepare tentative plans for necessary extensions of public works.

Peace Problems at Atlantic City Convention

WASHINGTON, Nov. 26.—The reconstruction conference which will be held next Wednesday, Thursday and Friday in Atlantic City, will afford an opportunity for an inter-industrial discussion of the great reconstruction problems. The various industries will first work out their own questions and will then take up the larger problems involving all lines of business.

The program worked out for discussion in the steel industry conference will bring up many problems that have been considered at great length in the various conferences held in New York and Washington since the signing of the armistice made speedy readjustment necessary. President James A. Farrell of the United States Steel Corporation is a leading speaker in this connection.

In the matter of Government speakers the chamber has not been as fortunate as earlier promises indicated. The resignation of Secretary McAdoo took his name from the list of Cabinet speakers. Secretary Baker's plan to go to Europe with President Wilson eliminated his name, leaving only Secretary Redfield of the Department of Commerce.

The Manufacturers' Council of the State of New Jersey has called a meeting at the Robert Treat Hotel, Newark, N. J., Dec. 11, with sessions throughout the day and evening, to consider readjustment plans and needs of the industries of the State. It is expected that about 1000 will be in attendance. Warren C. King is president.

Standardization of Ship Steel

Steelmakers and Shipbuilders Agree on Reduced List of Structural Shapes, Selecting Those Most Suitable for Ship Construction

Two conferences of vital importance to shipbuilders and steelmakers were held in Philadelphia, Nov. 19 and 20. The first was of steelmakers to take action on modifications in rolls to produce ship channels and shipbuilding bulb angles, and the second was between the steelmakers and representatives of the Emergency Fleet Corporation to take action on a revision of the American standard practice and to recommend a selected list of structural shapes most suitable for ship construction.

Representatives were present at these conferences from all the larger mills which manufacture structural steel shapes, namely, Bethlehem Steel Co., Cambria Steel Co., Carnegie Steel Co., Eastern Steel Co., Illinois Steel Co., Inland Steel Co., Jones & Laughlin Steel Co., Lackawanna Steel Co., Phoenix Iron Co. and Tennessee Coal, Iron & Railroad Co. At the second conference the United States Shipping Board Emergency Fleet Corporation was represented by Fred T. Llewellyn, in charge of steel standardization, engineering section, division of steel ship construction, and by A. J. C. Robertson, chief designer.

Plate Standardization Effected in July, 1917

The first step in the standardization of ship steel was taken July 2, 1917, when representatives of the above mentioned companies, with representatives of other manufacturers of plates, met in Washington and adopted the standard practice recommended by American steelmakers and subsequently adopted by the Emergency Fleet Corporation as a guide to the shipyards in placing orders with the mills for ship steel. The effect of the standard practice has been to eliminate minute variations in the thicknesses of plates ordered from the mills and to simplify the transmission of orders from the yards to the mills. The situation as regards plates has thus been so greatly improved, as compared with pre-existing practice, that the plate mills have been able to make some remarkable production records.

At the time the standard practice was adopted it was deemed inadvisable to prepare a selected list of structural sections, but only to recommend that in general the use of sections rolled infrequently be eliminated and that orders be confined so far as possible to American standard beam sections, American standard structural channels and plain angles, provided, however, that ship channels and bulb angles might be rolled if required on shipbuilders' schedules. While it was recognized that the bulb angle and the ship channel were more suitable than other sections for ship construction, the limitation in the use of ship channels and bulb angles was due to the lack of adequate facilities for their manufacture, and it was the desire of the steelmakers to make as broad as possible the allocation of ship steel to all makers.

It was further considered unnecessary to draft a selected list of structural sections for the reason that it was believed the Emergency Fleet Corporation's plan for the standardization of the designs of hulls, particularly cargo vessels, would of itself operate to reduce the number of structural shapes required, and, therefore, no further action was necessary. The recommended list, however, did limit the number of plain angles.

Experience Has Shown Need of Further Standardization

The experience of 16 months has made it clear to American steelmakers that the structural channel, by reason of its narrow flanges and steep inner flange slope, is not an entirely satisfactory section for use in hull construction; further, that the bulb angle is in many respects a most desirable section for ship construction and that its use should be encouraged rather than discouraged, and, further, that the introduction of beams and structural channels into the list for ship steel had opened the way to the use of an enormous number of structural sections with relatively limited tonnages per section.

This situation had also come to the attention of the Emergency Fleet Corporation by reason of the difficulties which, due to the use of a great variety of sections, the shipyards had had in securing an adequate supply of all these sections in due sequence as required in construction. In consequence an investigation was inaugurated in the division of steel ship construction, Daniel H. Cox manager, with a view to the tabulation by tonnages, shapes and thicknesses of all the sections used at the yards so as to make possible the compilation of a selected list of sections for use in the construction of ships, on the basis of which it might be possible to insure the receipt of steel in adequate volume and due sequence, and also to arrange for warehouse stocks of suitable sizes at conveniently located points.

Investigation Showed Many Sizes Not Needed

The investigation carried on by Mr. Llewellyn covered 1508 hulls of 10,302,150 dead weight tonnage either requisitioned or under construction by the Emergency Fleet Corporation, with a total shape weight of 1,100,651 net tons, distributed among 131 different structural shapes in 403 thicknesses (sections). It was noted that in the case of one design for a 5000-ton boat with but 1,026,966 lb. of structural shapes there were 42 different shapes and 118 separate thicknesses (sections), of which nine sections were rolled only at one mill and one tee section only at another mill. Of separate sections there were items as low as 8 lb. each and 35 sections less than 500 lb. each. Of one shape only 43 lb. were required. If such tonnage were the only tonnage available at the mills for this particular shape, it would require material for 4600 boats to accumulate before considerations of economical production would justify placement of rolls. Of another relatively heavy shape on the same basis, economical production would require tonnage for 1000 boats to accumulate. In the case of another cargo vessel of 9400 tons, requiring 1,800,103 lb. of structural sections, there were only 16 separate shapes and but 44 thicknesses, and of each separate shape the minimum quantity of any one thickness was 2800 lb. and that of a section in very general use. The next smaller item on that list is three tons of a small angle section which would only require material for 66 boats to accumulate. By the addition of 55 tons to the weight of the steel the number of shapes in that particular boat might be reduced to 8 and the number of different sections to 19.

This investigation also indicated that while a number of steelmakers rolled bulb angles and ship channels, those sections represented the growth of years and reflected the individual ideas of the shipyards for which rolls were first turned. There had been no definite endeavor to standardize those sections, with the consequence that American steelmakers published different dimensions, weights and properties for sections of the same depth, the use of which at the yards should be interchangeable.

Recommendations Following the Investigation

With the completion of his report and its distribution to the shipyards and to the steelmakers, Mr. Llewellyn recommended that ship channels and shipbuilding bulb angle sections be adjusted to British standards, that steelmakers confer and agree to publish like ranges of weights and dimensions, and that there be prepared for distribution to the yards a selected list of sections recommended as most suitable for ship construction.

The conferences were held in the offices of the Cambria Steel Co., with George E. Dix, assistant to the general manager of sales, in the chair. R. B. Woodworth, engineer with the Carnegie Steel Co., presented detailed written proposals as a basis of discussion for the modification and standardization of ship channels and bulb angles and for the revision of the American standard practice.

It was decided by the steelmakers that inasmuch as the British standard sections of the ship channels and shipbuilding bulb angles appeared to be better adapted to economical manufacture than the American standards, and inasmuch as the new rolls which had been turned in recent years to produce those sections conformed in general to British standards, hereafter American standards should be discontinued and rolls in hand not to British standards should be redressed at as early a date as possible to roll such sections as closely to British standards as slightly divergent methods of production would allow; particularly in view of the further fact that the adoption of British standard sections would enable American mills to compete on an even basis for ship steel wherever utilized in shipyards either at home or overseas.

It was further agreed that in general ship channel rolls would be dressed so as to produce the Lloyd minimum and maximum thicknesses with one thickness 0.05 in. less than British standards, and that mills publish but one intermediate thickness in the Lloyd range of ship channels, and that in bulb angles in general, where the Lloyd range seems to be too arbitrary, and to provide an unnecessary number of thicknesses, the Lloyd range should be aimed at only in the deeper sections, that there should be but one thickness below British standards and that intermediate thicknesses be published to vary by 0.05 in.; bulb angles to show exact leg dimensions at British standards and at 0.10 in. intervals above.

Selected List of Structural Shapes Recommended

Careful consideration was then given to a selected list of structural shapes to be recommended for ship construction, together with those modifications in the standard practice which the experience of 16 months indicated to be desirable. These were further discussed at the second conference with representatives of the Emergency Fleet Corporation, and it was further recommended to the corporation that as soon as possible a technical order be issued to all shipyards to put these recommendations in effect and that as far as possible orders for structural sections to be used in ship construction be governed by the recommended list of sections, as shown herewith.

Sections not shown in this list may be included on shipbuilders' schedules with the proviso that they be specified only when they can be ordered in lots of not less than 40,000 lineal ft. per shape at one time, or by special arrangement with the mills. Orders for such shapes should not be divided among mills, but the entire quantity of each shape should be placed at one mill with the express stipulation that that mill may at its option roll, ship and invoice all the tonnage at one time regardless of position in shipyards and fabrication schedules.

Same Problem Met and Solved in England

It is to be noted in this connection that the same problem of the standardization of ship steel has had the careful attention of the British Admiralty, the steelmakers and the shipyards of England, where the multiplicity of sections specified on shipyard schedules had also interfered with the progress of ship construction. In consequence, under the auspices of the Admiralty and the Ministry of Munitions, to facilitate regular and frequent rollings and thus avoid delays, a list of standardized sections has been drawn up and published in a pamphlet entitled "Procedure for Obtaining Ship Steel, December, 1917." For cargo vessels (standard ships) this list includes but four sizes of angles—6 x 6, 6 x 3½, 3½ x 3½ and 3½ x 2½; three sizes of bulb angles —10 x 3½, 9 x 3½ and 8 x 3, and but two sizes of ship channels—12 x 3½ in. light section and 12 x 3½ in. heavy section. For Admiralty oilers (tankers) there are shown but four sizes of angles and six sizes of bulb angles.

While the number of shapes in the English list is much smaller than the number of shapes in the recommended American standard practice, English mills are accustomed to roll shapes with much narrower variations in thickness than American mills, and in view of the desirability of the widest possible growth of ship construction in the United States it is inadvisable too narrowly to restrict American shipyards. The American list provides a larger number of shapes with fewer thicknesses.

STRUCTURAL SHAPES RECOMMENDED FOR SHIPS

Dimensions in Inches

Bulb Angle Weights Approximate

EQUAL LEG ANGLES

Size	Thickness	Wt. per ft.	Size	Thickness	Wt. per ft.
6 x6	0.750	28.7	3½x3½	0.625	13.6
	0.6875	26.5		0.5625	12.4
	0.625	24.2		0.500	11.1
	0.5625	21.9		0.4375	9.8
	0.500	19.6		0.375	8.5
	0.4375	17.2		0.3125	7.2
	0.375	14.9		0.250	5.8
5 x5	0.750	23.6	3 x3	0.500	9.4
	0.6875	21.8		0.4375	8.3
	0.625	20.0		0.375	7.2
	0.5625	18.1		0.3125	6.1
	0.500	16.2		0.250	4.9
	0.4375	14.3			
	0.375	12.3	2½x2½	0.375	5.9
4 x4	0.750	18.5		0.3125	5.0
	0.6875	17.1		0.250	4.1
	0.625	15.7	2 x2	0.250	3.19
	0.5625	14.3		0.1875	2.44
	0.500	12.8			
	0.4375	11.3			
	0.375	9.8			

UNEQUAL LEG ANGLES

Size	Thickness of Longer Leg	Wt. per ft	Size	Thickness of Longer Leg	Wt. per ft.
6 x3½	0.750	22.4	4 x3	0.500	11.1
	0.6875	20.6		0.4375	9.8
	0.625	18.9		0.375	8.5
	0.5625	17.1		0.3125	7.2
	0.500	15.3			
	0.4375	13.5	3½x3	0.500	10.2
	0.375	11.7		0.4375	9.1
5 x3	0.500	12.8		0.375	7.9
	0.4375	11.3		0.3125	6.6
	0.375	9.8		0.250	5.4
	0.3125	8.2	3 x2½	0.375	6.6
				0.3125	5.6
				0.250	4.5

BULB ANGLES

Size	Thickness	Wt. per ft.	Size	Thickness	Wt. per ft.
10 x3½	0.725	35.2	8 x3½	0.550	23.2
	0.675	33.2		0.500	21.6
	0.625	31.1		0.450	19.6
	0.575	29.1		0.400	18.0
	0.523	26.9			
	0.475	24.9	7 x3½	0.525	20.0
9 x3½	0.625	28.6		0.475	18.6
	0.575	26.6		0.425	16.8
	0.525	24.8		0.375	15.3
	0.475	22.7	6 x3	0.475	15.6
	0.425	20.9		0.425	14.1
				0.375	12.8
				0.350	12.2

SHIP CHANNELS

Size	Thickness	Wt. per ft.	Size	Thickness	Wt. per ft.
12 x3½	0.700	40.8	8 x3½	0.525	25.3
	0.600	36.8		0.425	22.6
	0.500	32.7		0.375	21.2
	0.450	30.6			
			7 x3½	0.500	22.5
10 x3½	0.675	34.8		0.400	20.1
	0.575	31.4		0.350	18.9
	0.475	28.0			
	0.425	26.3	6 x3½	0.475	19.8
	0.375	24.6		0.375	17.8
				0.325	16.8
9 x3½	0.650	31.3			
	0.550	28.3	6 x3½	0.350	15.2
	0.450	25.2			
	0.400	23.7			

TEES			HATCH ZEE (Tyzack)		
6½x6½	0.450	19.8	2½	0.500	13.6

15" STRUCTURAL CHANNELS

Thickness	Wt. per ft.	Thickness	Wt. per ft.
0.818	55	0.524	40
0.720	50	0.426	35
0.622	45	0.400	33

27 Shapes—115 Sections

Machinery Markets and News of the Works

NO CANCELLATION POLICY

Machinery Industry Waits for Official Action

New Machine-Tool Business Near Standstill—Railroad Buying Expected—Automobile Industry Making Rapid Readjustment

A definite Government policy for handling cancellations and the mooted questions arising from them is anxiously awaited by the machine-tool builders and dealers for clearing up the many complications that have been occasioned by the sudden cessation of war work. Although the bulk of stop-work orders came in the first few days following the signing of the armistice, there has been a steady influx of cancellations and attempts to cancel right up to the present time. The failure of the Government so far to establish anything more than a working principle to guide machine-tool manufacturers and dealers is serving to hold up abruptly questions of adjustment.

Present machinery business is confined to a small total of tools from scattered inquiry. This is slightly more active than for the week previous. A considerable factor of this trade is from plants re-establishing their regular peace-time operations. The automobile industry is making rapid strides toward the resumption of pleasure-car production. High hopes are held that the railroads will soon come heavily into the market.

Considerable prospective crane business, comprising for the most part additional facilities for shops of the Pennsylvania Lines East of Pittsburgh, the New York Central and other railroads, is still before the trade.

The removal of the pressure for war output has been followed by a quick reduction in operating schedules. In the Cincinnati district all night forces in the machine shops have been laid off, and in New England and elsewhere many shorter working schedules and cuts in labor forces are being announced.

These released workers have been absorbed readily by other industries, and as yet no serious labor troubles have occurred. Dispatches from San Francisco report that the local labor body is attempting to force the payment of a wage advance to foundry and machine-shop workers, in addition to the shipbuilders, who were granted an increase by the labor board.

The prospects for greater building activity are being watched closely. It is anticipated that the $50,000,000 building projects at Detroit, abandoned when the war was declared, will be resumed.

The progress of industrial housing projects under Government auspices is reported nearing an end. Work of this character is being abandoned wholly or in part at Lowell, Mass.; Bridgeport, Stamford and Waterbury, Conn., and Kittery, Me., etc.

New York

NEW YORK, Nov. 26.

The flood of cancellations has subsided substantially from the original rush, but some are still coming in and withdrawals of orders for single tools are being reported. The trade waits with patience, but in varying moods, for definite official action at Washington to point the way and clear up the whole cancellation situation. Local inquiry shows a little more life, but such revival as it is, is confined to small needs. Dealers are following up the trade closely in many cases. One manufacturer, on the other hand, has called in its sales staff from the road on the ground that solicitation during the period of perplexing readjustment will cause only annoyance to its customers. Some predictions are made that any resumption of normal buying will be deferred until after Jan. 1, but in other quarters it is pointed out that under present war taxes a good showing on the profit side of the ledger has its drawbacks.

Operations at out-and-out war plants are rapidly being brought in line with the stoppage of war production. The Lidgerwood Ordnance Co. plant of the American Can Co. at Bridgeport, Conn., is reported to have been closed down. The New England Westinghouse Co., Springfield, Mass., and the Remington Arms Co. are both disposing of a large amount of machine supplies used on war work. The Bethlehem Steel Co., Bethlehem, Pa., is reported to have cancelled orders for machine tools for one of its new gun shops, and corresponding machine purchases will probably be off. Working hours at the Watertown, Mass., arsenal have been reduced from three eight-hour shifts to 12 hours per day. In contrast are plans already under way among various manufacturers, especially in the Newark district, which provide for early or immediate operations on regular peace time products, in some cases with greater working forces than were employed on their war work.

A quantity of crane inquiry remains before the market. In addition to the 20 2-ton hand type listed by the Pennsylvania Railroad for its new Marietta shops, it is in the market for 4 25-ton 54½-ft. span for Pitcairn, 4 25-ton 54½-ft. span for Northumberland, and 1 5-ton 44-ft. gantry. Inquiry put out by it for 1 25-ton and 1 30-ton crane for Brooklyn may be held up. Orders placed by the purchasing department last week include 1 15-ton for Juniata and 2 5-ton grab bucket cranes for Washington. The New York Central Railroad has placed orders for 4 10-ton Shepard cranes for its East Buffalo shops. The Texas Shipbuilding Co., Bath, Me., has bought a 5-ton, 64-ft. span crane. Taken as a whole, both railroads and foundries are supplying a good lot of prospective business of this kind.

The Swedish Gage Co., 245 West Fifty-fifth Street, New York, is in the market for about 20 tools.

The railroads are being looked to as the most promising field for machine tool business, and they are doing considerable buying. The expansion of the railroad shop locomotive building capacity is the basis of most of it. The Pennsylvania Railroad is buying for all of its shops in the State of Pennsylvania and at other points. Active buying has been done by the Baltimore & Ohio, the Norfolk & Western, the Atlantic Coast Line and the Southern Railway. The Baldwin Locomotive Works, Philadelphia, is reported to have issued a large list of tools required for a similar plan of expansion.

Some dealers who have not previously undertaken export business are planning to enter the field. The basis of optimism toward future machine tool orders from abroad is that the bulk of machinery bought by the Allies during the war has been especially for munition work and will be subject to extensive replacement and scrapping, analogous to the situation in this country. The United States is believed by many, therefore, to be the machine-tool building nation destined to take the place Germany formerly occupied in supplying machine tools to France, Italy and other European countries.

No noticeable dumping of war equipment has yet begun. The opinion is expressed that a considerable part of used special and single purpose tools will be voluntarily scrapped unless a ready market should materialize. The sentiment is that the equipment has already paid for itself and earned a good profit, and therefore its resale valuation can properly be marked off the books.

S. Blickman, 199 Lafayette Street, New York, is having plans prepared by Ballinger & Perrot, 1328 Broadway, for a reinforced-concrete plant to be constructed on property recently acquired at Long Island City. The new works will manufacture coffee urns and sheet-metal products. Equipment will comprise heavy stamping equipment, drawing machinery, etc.

George Dubucs, Inc., New York, operating heretofore as George Dubucs, 53 West Sixty-third Street, has been incorporated with a capital of $25,000 to manufacture magnetos and parts.

The Wadol Corporation, New York, has been incorporated with a capital of $100,000 to manufacture oil and gas burners, etc. H. C. Wade, G. H. Porter and F. J. Linke, 136 Liberty Street, are the incorporators.

The G. E. Engineering Co., 417 Canal Street, New York, has increased its capital from $10,000 to $100,000.

The H. C. Mfg. & Engineering Co., New York, has been incorporated with a nominal capital of $6,000 to operate a machine repair works. J. W. Crouzer, W. L. Huyler and J. W. Lounsbury, Hempstead, L. I., are the incorporators.

The Long Island Pattern & Model Works, 71 Adams Street, Brooklyn, has been incorporated with a capital of $10,000 by H. L. C., W. J. and H. K. Kramer, to manufacture patterns and machine specialties.

The Belyea Co., New York, has been incorporated with a capital of $10,000 by W. P. Berryman, B. M. and T. S. Belyea, 48 East Eighth Street, to manufacture electric and gas-operated machinery.

The General Heating Corporation of America, New York, has been incorporated with a capital of $150,000 by H. G. Collier, 1472 Broadway; B. D. Lorenz, 5712 New Utrecht Avenue, Brooklyn, and S. L. Wentz, East Orange, N. J., to manufacture oil heaters, burners, etc.

The Public Service Commission, New York, is planning for the early award of remaining contracts on the dual rapid transit system to cost about $25,000,000, including the construction of four or more shop buildings for repair and general work.

Fire, Nov. 23, caused a loss of about $15,000 at the plant of the American Hame & Bit Co., New Jersey Railroad Avenue and Hamburg Place, Newark, N. J.

The Shaw & Darby Engineering Co., Newark, N. J., has been incorporated with a capital of $100,000 by H. M. Shaw, M. M. Stallman and L. I. Darby, to manufacture machinery.

The Submarine Boat Co., Port Newark, Newark, N. J., is arranging for the gradual reduction of its working force of 11,000 men. At one time it employed about 15,000 men.

Twelve vessels are now on the ways in course of construction at the plant of the Federal Shipbuilding Co., Kearny, N. J. The ships are of 9600-ton type, and will be carried through to completion. Under its contract 13 more vessels are to be constructed.

The Utica Duxbak Corporation, Hickory Street, Utica, N. Y., has had plans prepared for a three-story addition, 25 x 70 ft., to cost $20,000.

The General Equipment Co., Hornell, N. Y., has been incorporated with an active capital of $50,000 by F. R. Series, A. R. Palmer and H. G. Wenzel, Woodhaven, Long Island, to manufacture electric generating equipment, etc.

The International Arms & Fuze Co., Bloomfield, N. J., has had plans prepared for a one-story power plant, 38 x 40 ft.

The Plainfield Storage Battery Co., Plainfield, N. J., has been incorporated with a capital of $50,000 by Edward J. Way, J. S. Ridley and A. C. MacIntosh, to manufacture storage batteries.

The War Department, Washington, has ordered all work stopped on the construction of the proposed naval base at Stewartsville, N. J. The work had been planned to cost about $8,000,000.

The boiler plant at Camp Dix, near Wrightstown, N. J., was destroyed by fire, caused by an explosion, Nov. 13.

The Erie Railroad Co., Jersey City, N. J., has filed plans for a one-story tank car repair shop to cost $18,000, and a one-story car shop extension to cost $6,000.

The Aeroil Burner Co., 400 Main Street, Union Hill, N. J., has filed notice of organization by George P. Kittel, 24 Hudson Place, Weehawken, to manufacture oil and gas-burning equipment.

The Bayonne Machine Works, Jersey City, N. J., has been incorporated with a capital of $100,000 to manufacture machinery, with plant at Bayonne. Chris Nielson and Paul L. Crowe are the incorporators.

The Machine Engineering Co., 590 Communipaw Avenue, Jersey City, N. J., has filed notice of organization to manufacture machinery. Ernst M. Johnson, 25 Jones Street, heads the company.

The Service Co., Newark, N. J., has been incorporated with a capital of $25,000 by Victor Mandoff and Leonard G. Sire, to manufacture automobile parts, etc.

The Electrical Appliance Mfg. Corporation, Newark, N. J., has purchased for about $500,000 the four-story plant at 529-50 Frelinghuysen Avenue, recently erected by the Aeroil Mfg. Co. The new owner will take immediate possession and will establish a works for the manufacture of electrical specialties. The property includes a site of 6 acres, with total manufacturing space of about 110,000 sq. ft.

The Manning Sand Paper Co., Troy, N. Y., has filed notice of change of name to the Abrasive Co.

Philadelphia

PHILADELPHIA, Nov. 25.

The John Ilingworth Steel Co., Tacony and Lewis streets, Philadelphia, has awarded a contract to Irwin & Leighton, 126 North Twelfth Street, for a one-story brick and steel addition, 105 x 150 ft.

The Tinius Olsen Testing Machine Co., 509 North Twelfth Street, Philadelphia, will make alterations to cost $7,500.

The Department of Public Safety, City Hall, Philadelphia, has awarded a contract to George Dobbins, Forty-second Street and Chester Avenue, for alterations in the municipal repair shop at Eleventh and Reed streets, to cost $10,800.

Fire, Nov. 17, in the hammer shop at the Eddystone plant of the Baldwin Locomotive Works, Philadelphia, caused by an explosion in the compressed air system in section A, resulted in a damage to the structure and adjoining sheds estimated at $25,000.

A one-story, brick and reinforced-concrete pumping plant will be erected by the Barrett Mfg. Co., Philadelphia, at West Thirty-sixth Street and Grays Ferry Road.

The plant of the Schutte & Koerting Co., Twelfth and Thompson streets, Philadelphia, manufacturer of ejectors, valves, engine parts and kindred equipment, will be sold Dec. 14, with machinery and equipment, by A. Mitchell Palmer, alien property custodian.

A two story boiler plant to cost $20,000 will be built by Vaughn & Sons Co., Harris Street, near Delaware Avenue, Philadelphia.

The N. & G. Taylor Co., 300 Chestnut Street, Philadelphia, manufacturer of tin plate and metal specialties, is offering for sale its property at Tasker Street and Delaware Avenue, consisting of a building 148 x 380 ft., with a total floor area of 46,000 sq. ft.

The Pennsylvania Railroad, Broad Street Station, Philadelphia, has completed plans for its new car shops to be erected at Marietta, Pa. The structures will be of brick, steel and concrete, and will consist of engine house, machine shops, forge shop and other buildings. The main shop will be 400 x 800 ft. It is said that over 1000 men will be given employment at the new shops.

The Semple Rubber Co., Murray Street, Trenton, N. J., manufacturer of rubber tires and tubes, has acquired a three-story factory on Lamberton Street and will equip it for an extension.

The Edgewater Steel Co., Oakmont, Pa., has awarded a contract to the Austin Co., Cleveland, Ohio, for the construction of a plant to cost about $60,000.

The Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa., which has been manufacturing shells for the Government, is planning for the resumption of normal operations. It is understood that it has shell contracts on hand to carry through for several months.

The Boyerstown Burial Casket Co., Boyerstown, Pa., has acquired the plant of the East Greenville Mfg. Co., East Greenville, for an additional works, and will take possession Dec. 1. Equipment and machinery will be installed and it is planned to start operations Jan. 1. The structure is 40 x 150 ft. It will construct an L addition, 50 x 110 ft.

The Chicago Pneumatic Tool Co., Franklin, Pa., is taking bids from the home office at Chicago for the erection of a one-story addition to its assembling plant, 50 x 150 ft., to cost $50,000.

Plans have been prepared for a one-story boiler plant, 30 x 50 ft., to be erected at Nanticoke, Pa., by the Liberty Throwing Co., Wilkes-Barre.

The Lebanon Steel Foundry, Lebanon, Pa., has awarded a contract to G. H. Greiner, Lebanon, for a two-story and basement addition, 50 x 78 ft., and a one-story building, 24 x 24 ft.

The Delaware, Lackawanna & Western Railroad, Scranton, Pa., coal mines department, will build a one-story boiler

plant addition, 50 x 80 ft., and make improvements in the present boiler plant at the Loomis Colliery, near Nanticoke, to cost $10,000.

The Cumberland Valley Railroad, Chambersburg, Pa., a subsidiary of the Pennsylvania Railroad, has commenced the erection of an engine house addition at its local shops to cost $50,000.

M. S. Kemmeror & Co., Sandy Run, Pa., have had plans prepared for a one-story coal breaker to cost $10,000. Frank R. Davenport, Coal Exchange Building, Scranton, is the engineer.

The Barton Coal Co., Scranton, Pa., will build a one-story coal-washing plant, with capacity of about 500 tons a day, at Peckville, to cost $15,000.

New England

BOSTON, Nov. 25.

War's aftermath is slowing up production, and at the Bridgeport ordnance district meeting on Nov. 20 manufacturers were advised that a local board of claims will act under the Washington board in impartially winding up contracts. Some are finding it most difficult to make the change from a war to a peace output and short time, and even proposals of labor forces are here and there announced. Cancellations of work in the gas defense apparatus are noted, but orders for machine tools, grenades and shell parts are reported as still proceeding. The former probably are less promising as a stock material toward preparedness for any future war supplies. The progress of industrial housing under Government auspices comes nearer the end, and projects are already abandoned wholly or in part in such cities as Lowell, Mass.; Bridgeport, Stamford and Waterbury, Conn., and Kittery, Me. The general feeling is that of marking time hopefully.

Work has begun on a two-story machine shop, 200 x 220 ft., at Fitchburg, Mass., for Manning, Maxwell & Moore, Inc., New York.

Contracts are let for the construction and part of the equipment for alterations to the machine shop of the Morgan Construction Co., Worcester, Mass. Work is now under way.

The carpenter shop at the torpedo station, Newport, R. I., is to be rebuilt by the Navy Department at a probable cost of $1,000. Bids are being received.

Aetna Mills Co., Watertown, Mass., is having drawings made for a factory addition to cost $50,000.

Plans have been prepared for a one-story engine house, 75 x 106 ft., at Hopewell, Conn., for the New York, New Haven & Hartford Railroad Co., New Haven, Conn., to cost $26,000.

Plans have been prepared for a brick, one-story, 20 x 20 ft. centrifugal-pump house with an intake of 300 ft. x 30-in. pipe at the plant of American Electrical Works, Phillipsdale, R. I.

Three one-story buildings, 16 x 125 ft., 41 x 100 ft., and 22 x 28 ft., at cost of $25,000, for the Grand Trunk Railway Co. of Portland, Me., are under construction. The machine shop and roundhouse finishing and erection shop are well under way.

A reinforced concrete and brick veneer building, five stories, 75 x 170 ft., is being erected for the Lever Brothers Co., Cambridge, Mass.

The five-story, 25 x 65 ft. machine shop, brick mill construction, for the Saco Lowell Co., Biddeford, Me., is well under way.

Contract has been awarded for the erection of a $3,500 boiler house for Frank E. Boyd, Everett, Mass.

Work has been resumed on the 74 x 167 ft. addition, eight stories, to cost $500,000, to the plant of Gillette Safety Razor Co., Boston, Mass.

Buffalo

BUFFALO, Nov. 25.

The Curtiss Aeroplane & Motor Co., Buffalo, has completed the reduction of its working force to a total of about 3,000 men and is arranging plans for placing its works on a normal basis of operation. It will complete its contract with the Government for flying-boats before the close of the year, and a large section of the works will then be given over to the manufacture of aeroplanes for the regular market.

The Pierce-Arrow Motor Car Co., Buffalo, will operate on full time until after Jan. 1 for the production of trucks for the United States and French governments. Its aeroplane motor contracts with the Ordnance Department, as well as smaller contracts for motor trucks, have been canceled. Following the completion of the motor truck orders the plant will resume operations for the manufacture of pleasure cars and trucks for civilian use. It is planning to increase its working force by about 500 men.

Fire, Nov. 17, at the plant of the Polson Mfg. Co., 1754 Main Street, Buffalo, manufacturer of automobile parts, caused a loss of about $8,000. W. F. Polson is president.

The Auto Specialties Mfg. Co., Buffalo, has been incorporated with a capital of $10,000 by A. R. Gregory, J. Hefter and A. E. Davenport.

The Howard Steel Corporation, Buffalo, has been incorporated with a capital of $400,000 by E. W. Seeger, F. G. Buxby and N. C. McGuire, to manufacture iron and steel products.

The Ford Motor Co., 2495 Main Street, Buffalo, is planning the early resumption of operations at its local assembling plant. It is proposed to turn out about 250 machines a week, giving employment to over 400 men. George B. Tyler is local manager.

The American Car & Foundry Co., Babcock Street, Buffalo, has completed plans for a one-story addition on Metcalfe Street, 48 x 120 ft., to cost $6,500.

The Rochester Boat Works, Rochester, N. Y., has increased its capital from $30,000 to $100,000.

The Clemens Electrical Corporation, 725 Main Street, Buffalo, electrical machinery and equipment, has increased its capital from $10,000 to $100,000.

The Atlas Steel Casting Co., 1963 Elmwood Avenue, Buffalo, has completed plans for a one-story foundry addition, 50 x 112 ft., to cost $8,000.

The Junior Fabricated Boat Co., Buffalo, has been incorporated with a capital of $12,000 by Dew Clinton, U. Wilcox and M. S. Short to manufacture fabricated steel boats.

It is announced that John M. Willys, president Willys-Overland Co., Toledo, Ohio, has become sole owner of the New Process Gear Co., Syracuse, N. Y. Mr. Willys had been a large stockholder of the company for some time. Following the transfer of the property he was elected president, succeeding Thomas W. Meachem, who founded the business 30 years ago. Allen Smith is vice-president and general manager.

G. W. Kittredge, chief engineer, New York Central Railroad, Grand Central Terminal, New York, has had plans prepared for a mechanical coal-handling plant to be built at Ogdensburg, N. Y., at a cost of $30,000.

The J. P. Devine Co., Buffalo, manufacturer of vacuum drying and impregnating apparatus, has let contract for the erection of a two-story brick and steel addition to its machine shop, 26 x 102 ft., to cost $11,000.

Baltimore

BALTIMORE, Nov. 25.

The Poole Engineering & Machine Co., Baltimore, will build an additional boiler house.

The United Electric & Welding Co., Baltimore, has changed its name to the United Electric Welding Co.

Samuel T. Williams, 223 North Calvert Street, Baltimore, is seeking prices on 300 to 350-hp. engines.

Hackley Morrison, 204 Moore Building, Richmond, wants prices on an 8 or 10-ton, 4-wheel, saddle-tank locomotive, 42-in. track gage.

The City Council, Norfolk, Va., has authorized a $70,000 bond issue for extension of the waterworks, including a 15,000,000-gal. electrically-driven pump and three transformers. Walter H. Taylor, Jr., is city engineer.

The Chesapeake Railroad will erect a machine shop, 100 x 160 ft., at Newport News, Va.

W. A. Carver, Rougemont, N. C., is seeking prices on second-hand molding, saw-edging and rip-saw machines.

The Elloree Electric Light Co., Elloree, S. C., will rebuild the plant recently destroyed by fire and install new machinery.

The city of Brunswick, Md., is having preliminary plans prepared for extensions in the municipal waterworks to cost about $125,000. It is proposed to establish a plant with a daily pumping capacity of about 300,000 gal. Norton, Bird & Whitman, Munsey Building, Baltimore, are engineers.

The Pangborn Corporation, Hagerstown, Md., manufacturer of foundry equipment, has broken ground for a two-story addition, 40 x 70 ft.

The Haggarty Cigar Bunching & Rolling Machine Co., Mannington, W. Va., has been incorporated with a capital of $10,000 to manufacture cigar-making machinery. J. S. Haggerty, Frederick G. Barlow and L. N. Beaty are the incorporators.

The Navy Department, Washington, has stopped work on the new high-explosive manufacturing plant at Parksdale, Wis., estimated to cost $15,000,000. About $3,000,000 has been expended to date. Orders have also been issued suspending the work at the large powder plant at Nitro, W. Va.

The Southern Endless Belt Co., Petersburg, Va., is erecting a new one-story building, about 40 x 125 ft., on High Street, to cost $5,000.

J. R. Layne, Richmond, Va. has leased property at 1211 West Broad Street for the establishment of a machine shop. It will specialize in general machine and automobile work.

The Florida Glass Co., Tampa, Fla., recently organized, has perfected plans for the erection of a new plant near Tarpon Springs, to cost about $150,000, including equipment. The works will consist of a main building, 150 x 300 ft.; machine shop, 40 x 75 ft.; one-story forge and blacksmith works, 20 x 30 ft.; one-story mixing department, 30 x 40 ft., and other structures.

The American Car & Foundry Co., foot of East Eighth Street, Wilmington, Del., has broken ground for a one-story machine shop, 75 x 192 ft., to cost $29,500.

The Manganese Steel Casting Co., Newton, near Norfolk, Va., has awarded a contract to the General Contract Co., Citizen's Bank Building, Norfolk, for the construction of a new plant, to cost about $300,000 and has secured a site of about 8 acres on the Eastern Branch of the Elizabeth River. The works will include foundry, machine shop, pattern and molding shops, grinding works, furnace plant with four 10-ton electric furnaces, and office building. An electric power plant will also be constructed. The company will specialize in the manufacture of manganese steel castings, and will have an initial daily capacity of about 40 tons. It is proposed to have the plant ready for occupancy by next summer.

Pittsburgh

PITTSBURGH, Nov. 25.

Machine-tool distributers in Pittsburgh have received quite a number of cancellations during the past week of tools ordered by manufacturers whose war work has been discontinued. One of the largest cancellations was that of the Whitaker-Glessner Co., Wheeling, W. Va., which had bought complete shell-making equipment for its Beach Bottom, W. Va., plant. Other cancellations are from scattered sources, but aggregate quite a volume. Where work had been begun on the tools some method of financial adjustment will be arranged. Builders of cranes have also received rather large cancellations.

There is no new business in sight of any importance, except pending purchases of the Pennsylvania Railroad, and it is believed that these will go through.

No formal cancellation orders have as yet followed the request for suspension of all work for the Neville Island gun plant, but machine-tool sellers are expecting such cancellations. There are conflicting reports as to the future of the Neville Island plant, but no official information is available. One report is that the plant will be completed for production of three guns a month, original plans having called for 12 guns a month in addition to a large shell output. Another report is that work on the plant will be held up until the peace treaty is signed, as the extent to which disarmament is made a feature of peace conditions will have its effect upon production of ordnance in this country.

The Hubbard Pressed Steel Co., Niles, Ohio, has rebuilt and is now operating its factory, products of which are malleable-iron and cast-iron washers, plate steel washers, baling buckles, keg and barrel cleats, automobile parts, etc. The factory was destroyed by fire last August. The company is a subsidiary of Hubbard & Co., Pittsburgh.

The Crucible Steel Co. of America, Pittsburgh, has filed plans for a one-story steel hammer shop on Thirty-first Street, near the Allegheny River, to cost about $18,000.

The Fort Wayne Railroad, Pittsburgh, has taken out a permit to build a one-story brick repair and construction shop on Columbus Street, Northside, to cost $20,000.

The Riflaw Wrench & Tool Co., Pittsburgh, has been incorporated with a capital of $10,000 by E. J. Ri... Pittsburgh; Thomas V. Lawry, Emsworth, Pa., and R... Lawry, Leelsdale, Pa., to manufacture wrenches and hand... The new corporation has taken over the patent rights ... Hanson Y. Bovee on a hand wrench.

The Pemberton Coal & Coke Co., Affinity, W... Va., is planning the erection of a one-story machine sho... electric power plant, with boilers and generator, and o... structures.

The Firth-Sterling Steel Co., McKeesport, Pa., manufacturer of tool steels, has broken ground for the construction of a coal-handling plant and pumping plant at its works, to cost about $200,000.

The United Coal Co., Pittsburgh, will build a new coal tipple at its mines at Webster, Pa.

The Beckwith Machinery Co., Pittsburgh, has purchased a brick building, 40 x 90 ft., at Arch Street and Parkway from N. C. Wilson for $23,000.

The Capson Glass Co., Connellsville, Pa., has commenced the erection of a new gas producer plant at its works, to cost about $100,000.

The Enterprise Machine Shop, Beaver Falls, Pa., is arranging plans for the resumption of operations at its works on a normal basis. It has been doing extensive Government work, including the production of metal patterns, dies, etc. C. Spikerman is general manager.

Chicago

CHICAGO, Nov. 25.

Much hope for an early renewal of plant construction is based on the raising of restrictions on building. A large number of projects have been suspended because of war restriction and it is felt that a fair percentage of these will now go forward despite the check that prevailing prices for material are certain to impose.

The Johns-Manville Co., maker of asbestos and magnesia products, has bought a tract of about 225 acres near the town of Michigan, north of Chicago, and will erect there, according to reports, a duplicate of its plant at Manville, N. J., at a cost of about $3,000,000. The total cost of the land, which was bought in parcels, was about $119,000.

Plans have been prepared for a foundry, 32 x 181 ft., at 7700 to 7740 St. Lawrence Avenue, Chicago, for Mason Davis & Co., Inc., 9220 Blackstone Avenue, manufacturer of ranges. The cost will be $10,000.

A two-story top addition will be added to the factory of the Vitanola Talking Machine Co., on Fifty-second Street, north of Twenty-second Street, Chicago. M. C. Schiff, 503 West Thirty-fifth Street, is president of the company. The cost of the addition will be $5,000. The company recently purchased a site, and contemplates the erection of a six-story factory.

William P. Whitney, architect, 28 South Dearborn Street, Chicago, has prepared plans for a plant just outside of Buffalo, N. Y., to be devoted to the production of clay products. The cost of the building and industrial tracks to be laid will be about $100,000. Work is to be started in the spring.

Plans have been completed for a one-story factory, 80 x 150 ft., at 2823 Fulton Street, Chicago, for the Chicago Gear & Mfg. Co., 1330 West Jackson Boulevard. It is to cost $35,000.

It is expected that work will soon begin on a two-story factory, 120 x 200 ft., in Ravenswood Avenue, near Montrose Avenue, Chicago, for the H. G. Saal Co., manufacturer of tools and hardware specialties. The project was first reported in March of this year.

The Cockran Pipe Wrench Co., 7800 Woodlawn Avenue, Chicago, has beeen granted a permit for the construction of a two-story factory, 36 x 100 ft., at 7808 Woodlawn Avenue, at a cost of $6,500.

The Kedzie Foundry Co., 3234 West Thirty-first Street, Chicago, has obtained a permit for the construction of a one-story foundry, 46 x 60 ft., to cost $12,000.

The Schlangen Brothers Co., machinery manufacturer, 2435 Irving Park Boulevard, Chicago, has been granted a permit for the erection of a one-story addition, 73 x 75 ft., to cost $6,000.

Plans have been prepared for a one-story building, 80 x 150 ft., at the southeast corner of Thirty-first Street and Central Park Avenue, Chicago, to be used as a warehouse and for fabricating steel for concrete reinforcing by the Concrete Steel Co., 53 West Jackson Boulevard.

The Chicago Gear Mfg. Co., 1350 West Jackson Boulevard, Chicago, is planning for the erection of a one-story plant, 100 x 150 ft., at Fulton and Thirty-fifth streets, to cost about $[illegible],000.

The Emerson Brantingham Co., Rockford, Ill., manufacturer of agricultural machinery, will build a new two-story plant, about 60 x 100 ft., on University Avenue, Minneapolis, Minn.

The Minneapolis & St. Louis Railroad, Minneapolis, Minn., is constructing the construction of a new one and two-story terminal plant at Fort Dodge, Iowa, to consist of engine house, machine shop, boiler plant and power house. Coal handling machinery, turntable and other equipment will be installed. The company is also planning for the remodeling of a two-story shop at Marshalltown, Iowa, to cost $[illegible],000.

The Keller Mfg. Co., Quincy Street, Minneapolis, Minn., manufacturer of agricultural implements, etc., is having plans prepared for the erection of a new one-story foundry, 50 x 100 ft.

The Racine Screw Works, Racine, Wis., will build a one-story addition to its plant, 28 x 60 ft.

Cleveland

CLEVELAND, Nov. 25.

Machine-tool builders in most cases have not yet adopted a general policy regarding cancellations and are awaiting an announcement of the Government's attitude in making adjustments on machinery ordered to fill war contracts. In the meantime a large number of orders to cancel tools are held under consideration. It is reported that the Government is unwilling to assume obligations for the profit that would be made through the filling of canceled orders. In many cases machine-tool builders have refused to make cancellations for machinery now being made and have advised buyers that it will be shipped when completed. Some cancellations are being accepted where work has not been started. At least one prominent local machinery house has canceled no stock orders.

Cancellations the past week were comparatively few, the bulk coming in the two or three days immediately following the announcement of Government cancellation of contracts for war material on which work had not begun. There have been but few cancellations of punching and shearing machinery, as this is going mostly to plants doing work for the Emergency Fleet Corporation. The Government has canceled very few locomotive crane orders. In some cases manufacturers have been advised that these cranes will be used for work other than that recently intended.

Two local manufacturers who have large orders for artillery tractors and small types of fighting tanks have received instructions to suspend production, but the Cleveland branch of the Ordnance Department is making a survey of the progress of work and some curtailment seems probable.

Some new inquiry is coming from firms that are arranging to get back into their regular lines, including automobile and tractor manufacturers, manufacturers of hardware, automobile tire makers, manufacturers of glass bottles and tools having machine shops, and makers of plumbers' brass goods. Inquiries from Akron rubber manufacturers the past week included three large boring machines.

The Reflex Ignition Co., Cleveland, maker of spark plugs, has acquired a site on West 106th Street, where it contemplates erecting a plant.

The National Belting Co., Cleveland, has acquired a two-story factory in West Sandusky, Ohio, where it will establish a branch plant and will move its Norwalk, Ohio, plant to that city.

The Ideal Bronze Mfg. Co., 1265 East Fifty-fifth Street, Cleveland, contemplates the erection of a $20,000 factory building.

The Watson Mfg. Co., Toledo, Ohio, has acquired a site at Albion and Post streets on the New York Central Railroad, and plans to erect a two-story machine shop, 60 x 200 ft. The company manufactures cutting tools.

The Timken Roller Bearing Co., Canton, Ohio, has about completed several additions to its plant. One building 300 x 200 ft., two stories, will be used for assembling bearings, manufacturing cages, roll gaging and inspection and other departments. Other extensions include a building, 120 x 140 ft. to be occupied by the hardening department and chemical laboratory, offices, etc. A new boiler house is also being erected.

The Kittoe Boiler Co., Canton, Ohio, is enlarging its plant by the erection of an addition, 50 x 200 ft., which will about double its present capacity.

The Lucius Reinforced Tank Co., Massillon, Ohio, has increased its capital from $50,000 to $100,000.

John F. Godfrey, Elkhart, Ind., manufacturer of conveying machinery, is planning the erection of a small machine shop and expects to be in the market for equipment.

The J. C. Whitlam Mfg. Co., Wadsworth, Ohio, is erecting a two-story and basement addition to its factory, 30 x 60 ft. The front half of the ground floor will be used for offices and the remainder of the building for manufacturing and storage.

The Crowell-Lundoff-Little Co., Cleveland, has been awarded contract by the Detroit, Toledo & Ironton Railway Co. to erect an 8-stall engine house and machine shop at Napoleon, Ohio, to cost about $80,000.

Milwaukee

MILWAUKEE, Nov. 25.

Local manufacturers regard the machine-tool industry with more hopefulness than they had anticipated in contemplating the effect of the cessation of hostilities. While cancellations have been received and considerable business has been ordered held pending a more definite alignment of the situation, these developments have caused no particular apprehension. Tool builders feel that it is only natural there should be some relaxation from the period of intense pressure which has existed the past two and one-half to three years and believe that when the industry is again on a peace basis, a broad volume of business will come to them. New orders the past week have been of small volume.

One of the most encouraging features is the fact that foundries in and near Milwaukee are not only able to sustain production at virtually maximum capacity, but a number of shops will be enlarged without delay.

The Gerlinger Electric Steel Foundry Co., Milwaukee, has been incorporated with a capital stock of $99,000 by the owners of the Gerlinger Steel Castings Co. to control and manage the new electric steel foundry now being completed at Fifty-ninth and National avenues, West Allis. At the same time, the original corporation has increased its capital stock from $15,000 to $75,000. The officers of the Gerlinger Steel Castings Co. are: President, George P. Gerlinger; vice-president, William E. Gerlinger; secretary, Walter Gerlinger; treasurer, C. A. Gerlinger. The officers of the Gerlinger Electric Steel Foundry Co. are: President, William E. Gerlinger; vice-president, George P. Gerlinger; secretary and treasurer, C. A. Gerlinger. The new electric steel foundry is expected to commence operations about Dec. 12 or 14 and will have an initial capacity of 12 to 15 tons per day. The main building is 80 x 190 ft., and the core-room, 30 x 100 ft.

The Standard Foundry Co., Racine, Wis., has engaged Edmund B. Funston, architect, Racine, to design a new foundry of brick and steel, 80 x 200 ft., costing about $50,000 with equipment. Bids for the construction work will be taken about Dec. 1 and contracts awarded at once so that the new shop will be ready for operations early in the spring. The Standard company several months ago was purchased from the Kousek brothers by Arthur R. and David G. Janes, who had previously been stockholders. Arthur R. Janes is president and general manager.

The Northern Corrugating Co., Green Bay, Wis., has been organized with a capital stock of $200,000 to manufacture iron, steel and tin sheet metal products. The incorporators are Frank Flagge, for several years superintendent of the Milwaukee Corrugating Co., Milwaukee; A. M. Smith, Milwaukee, and H. W. Krueger, Green Bay.

The Janesville Machine Co., Janesville, Wis., resumed building operations Nov. 20 on the new tractor manufacturing plant which the General Motors Corporation is establishing in Janesville. The first unit will consist of a machine and assembling shop, 216 x 514 ft. Since the lifting of restrictions upon materials, it is intended to proceed without delay with the construction of the second unit, consisting of a general foundry, core-room and auxiliary buildings, details for which will be announced within a short time.

The Stamp Loading Machine Co., Milwaukee, has been incorporated with an authorized capital stock of $75,000 to manufacture, repair and remodel machine tools and other machinery. The incorporators are Hugo O. Stamp, Charles J. Pokorney and Irwin S. Toepfer. Mr. Toepfer is president and treasurer and Mr. Pokorney, secretary W. Toepfer & Sons Co., iron works, 80 Menominee Street, Milwaukee.

The Sturgeon Bay Fruit Package Co., Sturgeon Bay, Wis., manufacturer of veneer boxes and wire-bound packages, will build a three-story addition, 52 x 90 ft., and a boiler and engine house addition, 26 x 30 ft.

The Marshfield Farm Electric Co., Marshfield, Wis., manufacturer of farm lighting systems and electrical devices, has changed its corporate style to the Marshfield Electric Co.

The Harley-Davidson Motor Co., Milwaukee, which some time ago took over several buildings of the plant of the Pabst Brewing Co., 917 Chestnut Street, to increase its capacity for manufacturing military motorcycles, is proceeding with the work of remodeling and equipping the structures. A statement by William S. Harley, secretary and treasurer, is to the effect that the work will proceed even if the Government cancels all or part of its contracts. The main works are located at 3732 Chestnut Street, and an automatic shop is maintained at 160 Clinton Street, Milwaukee.

The International Steel Products Co., 932 First National Bank Building, Milwaukee, expects to begin initial operations in its new works at Hartford, Wis., Dec. 2. The company will manufacture mufflers or silencers for motor vehicles and gas engines.

The Milwaukee acetylene compressing plant of the Prest-O-Lite Co., Indianapolis, at 619 Trowbridge Street, West Allis, was practically demolished by an explosion on Friday, Nov 22, and adjacent buildings were badly damaged. The loss is estimated at $10,000. The plant will be rebuilt immediataely.

The Markesan Laundry Machinery Co., Markesan, Wis., has increased its capital stock from $25,000 to $50,000. It is planning to increase its output but is not ready to announce details of proposed additions, which are to be erected in the coming year.

The Trico Fuse & Mfg. Co., 1009 Cold Spring Avenue, Milwaukee, sustained an estimated loss of $5,000 by fire Nov. 20. Operations were interrupted for several days while repairs were made.

The National Enameling & Stamping Co., Milwaukee and New York, has acquired a tract of land and dock property adjacent to its Milwaukee works, 909 St. Paul Avenue, to provide for future extensions. It has a frontage of 130 ft. along the main line of the Chicago, Milwaukee & St. Paul; 142 ft. on South Twelfth Street, and approximately 500 ft. on the Kneeland branch of the Menomonee canal. A large warehouse now occupies a part of the acreage. The sale price is stated to be in the neighborhood of $200,000. Edward H. Schwartzburg is general manager of the Milwaukee plant.

The Plymouth Motor Mfg. Co., Plymouth, Wis., formerly the Steiner Engine Mfg. Co., has elected the following officers: President, George W. Brickbauer; vice-president, Charles Steiner; secretary, Frank Schryer; treasurer, Gustav W. Schiereck. The company manufactures portable and stationary gas engines and vehicle power units and has orders on its books which will keep the plant busy for three or four months.

Charles F. Goldstone, Menominee, Mich., has taken over the sheet metal works of the William Simpson Hardware Co. in that city and will enlarge the shop by installing several new machines and other equipment.

The Universal Products Co., Madison, Wis., has been incorporated with a capital stock of $50,000 to manufacture motor vehicles, tractors, machinery, and install lighting and heating plants. The incorporators are John L. Bourke, John L. Newman and Ethel Lee, all of Madison.

The Worden-Allen Co., Milwaukee, reports that it has sufficient orders in hand to keep its local fabricating and erecting shop operating at capacity for three months or more.

Detroit

DETROIT, Nov. 25.

Machine-tool jobbers report a slackening of demand, due largely to cancellations caused by the cessation of Government contracts. This condition is expected to last only a very short time as industries are already well under way on a peace basis, while actual buying for peace-time production has scarcely commenced. Numerous inquiries for large amounts of machinery have been received. Dealers state that within 10 days or two weeks they expect the market to reassert itself and after that they look for the greatest business in their history.

Removal of the building construction ban is expected to result in the immediate resumption of building on a large scale. The declaration of war caused the abandonment of building projects in Detroit totaling well over $50,000,000. Most of these will be resumed within a short time.

Automobile and accessory companies have been somewhat handicapped by inability to secure raw material for manufacturing on a peace basis. That they now expect to obtain it without great difficulty is indicated by the fact that two manufacturers in this district have announced a substantial decrease in their prices.

Henry Ford's Eagle plant at River Rouge, just west of Detroit, will be converted from a war-time industry into a peace-time producer around which will grow an industry employing 100,000 men, according to announcements recently made. Government contracts will be completed until June, 1919, after which Mr. Ford will first build a fleet of canal barges for his own projects which will be used as the connecting link between his blast furnaces, tractor and automobile industries. Later the shipyard will take orders for barges from other concerns. The Ford canal barges will take the rough parts of tractors and automobiles from Detroit to a large plant on the Eastern seacoast from which they will be distributed to the various assembling plants throughout the United States. Mr. Ford stated that his company had manufactured 23,000 tractors and has on its books orders for 23,000 more.

The Wilson Body Co., Detroit, has secured a permit to erect a building to cost $250,000.

The Industrial Works, Bay City, Mich., is building an addition to its plant. It now employs more than 1700 and when the new addition is completed the force will be increased by several hundred.

Mitts & Merrill, 913 Tilden Avenue, Saginaw, Mich., manufacturers of keyseating machinery, have filed plans for the erection of a new machine shop to cost about $85,000.

The Detroit Copper & Brass Rolling Mills, Clark Avenue, Detroit, have awarded a contract to A. A. Albrecht, Penobscot Building, for an addition to cost about $400,000.

The Liberty Machines Corporation, Detroit, has been incorporated in Delaware with capital of $100,000 to manufacture vending machines, weighing machinery, etc. J. William Barnes, Detroit, is the principal incorporator.

The Gier Pressed Steel Co., Lansing, Mich., has broken ground for the erection of a new one-story foundry, 100 x 200 ft., to cost $75,000.

Cincinnati

CINCINNATI, Nov. 25.

All night forces in machine shops have been laid off, and no overtime work is being done. Stop orders on machine tools are rapidly developing into cancellations, and while there is sufficient work to keep most shops operating by using only their day forces, this may be cut down to such an extent that many workmen will have to be released within a short time. Some shops employing female help have commenced to dispense with this class of labor, and within a very short time it is more than probable that only a small percentage of women will be employed.

The uncertainty of the machine-tool situation has not been relieved by visits to Washington of manufacturers. Promises of fair treatment by the Government are readily accepted as being sincere, but these promises have not cut down cancellation orders, especially from those who have been working on war contracts. It is manifestly impossible for machine-tool builders to make up a lot of machines and store them. One prominent maker predicts that more labor will have to be released until there is something definite ahead for all manufacturers. Much high-priced material is on hand or contracted for and unless the situation clears up soon undelivered orders will doubtless be canceled.

A large nearby firm which has been working on shell forgings for some time has recently been diverting much of its product to railroad needs. It is still engaged in filling a large contract from the Navy Department which is understood to carry a non-cancellation clause.

The Century Machine Co., Cincinnati, maker of lasters machinery, is reported to have plans under way for enlarging its plant on Spring Grove Avenue. Full details are not yet available.

The Wainright Ice Machine Co., Cincinnati, has been incorporated with $50,000 capital stock by J. D. Wainright and others. Nothing has been given out as to manufacturing plans.

The Long & Alstatter Co., Hamilton, Ohio, is pushing work on its new foundry which it expects to have in operation before the end of the year. Fred C. Avery is general manager.

The plant of the Monarch Engineering Co., Dayton, Ohio, sustained a loss by fire Nov. 16 estimated at $150,000. It was engaged in the manufacture of mechanical toys as well as machine shop specialties. Rebuilding will commence as soon as insurance adjustments are made.

The Dayton Rubber Mfg. Co., Dayton, will increase the output of its plant at an early date. John A. MacMillan is president.

The Wellston Ice Co., Wellston, Ohio, whose incorporation was recently noted, has purchased the plant of the

Wellston Brewing Co., and will install additional equipment for making ice.

The Brush-McCoy Pottery Co., Zanesville, Ohio, suffered a fire loss recently estimated at $100,000. It is reported that rebuilding will begin as soon as building materials can be obtained.

The Jackson Shovel & Tool Co., Montpelier, Ind., has contracted for work on a one story building, 65 x 200 ft., of mill construction.

The Lexington Motors Co., Connersville, Ind., is erecting a plant, 300 x 600 ft., of brick and steel.

The Browne-Mills Electric Co., North Manchester, Ind., has increased its capital stock from $25,000 to $68,000.

The Quality Tire & Rubber Co., Anderson, Ind., has acquired factory buildings with 57,000 sq. ft. of floor space which it will equip for the production of tires and tubes.

The Central South

LOUISVILLE, Nov. 25.

The Henry Vogt Machine Co., Tenth Street and Ormsby Avenue, is planning for the installation of three traveling cranes in its local plant.

Felix Renick, McCombs Oil Co., Louisville, reports that the company will shortly be in the market for tubes, condensers, stills, agitators, pumps and general refining equipment in connection with remodeling a plant at Torrent, Ky. It is at present in the market for oil well casing, tubing and pipe.

Harry Brown, Buzz Engineering Co., Louisville, reports that machinery is being installed and the company expects to begin the manufacture of pumps and conveying equipment within 10 days. Later it will operate a general machine shop.

The Asher Stave & Lumber Co., Pineville, Ky., recently incorporated with a capital stock of $25,000 by W. L. Asher and others, will install equipment for cutting staves and timber.

The Pioneer Pole & Shaft Co., Evansville, Ind., has also completed a new plant for manufacturing coal mine cars.

The Kentucky Fuel & Oil Co., Jackson, Ky., is in the market for oil well equipment, including casing, tubing, pipe and drilling machines.

Charles T. Lehman, Birmingham, Ala., wants prices on two 125 to 150-hp., 125-lb. pressure locomotive or other type boilers.

John G. Duncan & Co., Knoxville, is in the market for a 9x6 jaw crusher for crushing rock and pulverizing coal.

The Lock-Moore Co., Westlake, La., is in the market for a heavy duty, rocker valve engine, 26 x 30.

The U. S. Maritime Corporation, Brunswick, Ga., is inquiring for a 1500-lb. blacksmith's steam hammer.

The Kentucky Electrical Co., Owensboro, Ky., manufacturer of electrical specialties, has increased its capital from $75,000 to $105,000.

Williams, Wells & Pierson, Hattiesburg, Miss., are planning for the erection of a new planing mill.

The Dixie Power Co., Cotter, Ark., is considering the construction of a new hydroelectric power plant on the White River, with a capacity of about 60,000 hp., to cost $5,000,000. Walter Powell is president.

St. Louis

ST. LOUIS, Nov. 25.

E. J. Hahn, Little Rock, Ark., has contracted with the Little River Drainage district for about 14 miles of floating dredge work and is reported in the market for equipment.

The Bay Springs Electric Light Co., Bay Springs, Miss., C. E. Ford, manager, is in the market for generating equipment to replace that destroyed by fire.

Harden College, Mexico, Mo., will install equipment for a machine shop addition.

The Citizens Ice & Cold Storage Co., Little Rock, Ark., will install an 80-ton refrigerating unit in its plant.

The Holly Springs Refrigerating Co., Holly Springs, La., Hamilton Johnson and others interested, will equip a plant costing about $20,000.

St. Louis will expend about $350,000 in doubling the capacity of the new municipal dock with mechanical loading and unloading machinery.

The City Commissioners, Meridian, Miss., will install a steam driven pumping unit of 500,000 gal. capacity.

Weston, Mo., will improve its waterworks plant with new pumping equipment and other machinery. C. E. McCrae, Republic Building, Kansas City, Mo., is engineer in charge.

The Commonwealth Public Service Co., Muskogee, Okla., is in the market for steam turbines direct connected to 2300-volt, three-phase, 60-cycle alternator, horizontal type.

Texas

AUSTIN, Nov. 23.

It is announced that the plant of the Dallas Motor Car Co., Dallas, which was recently destroyed by fire entailing a loss of $150,000, will be rebuilt.

The Louisiana-Rio Grande Canal Co., Pharr, will expend $175,000 for additional pumps and other equipment for its irrigation system.

Shipbuilding plants at Houston, Orange and Beaumont expect to be kept busy for some time to come. It is authoritatively stated that the plants are permanent and that there will be no decrease in their operations at present.

The Dickerson-Tanner-Whaley Co., Brownwood, is promoting the construction of a large system of irrigation in the Panhandle region. It plans to build a dam across the Canadian River and install pumping plants for irrigating several thousand acres.

The Chickasha Oil & Gas Refining Co., of which W. A. Hartray, Cushing, Okla., is superintendent, will construct a refinery at Wichita Falls with a daily capacity of 1500 bbl.

The Federal Oil & Refining Co., Burkburnet, which recently purchased a site of 16 acres upon which to construct a refinery with a daily capacity of 2000 bbl., is assembling material for the proposed plant. It is reported that the company also has under consideration the building of a refinery at Fort Worth. Judge D. R. Welty, Oklahoma City, Okla., is president.

Heldenfels Brothers, Rockport, have received a second order for the construction of four hulls. Each ship will cost more than $300,000 and will be of the Ferris type.

It is announced that McBride & Hall, Port Arthur, will construct marine ways, repair shops and shipbuilding yards as soon as Government contracts now on hand are completed.

The Pacific Northwest

SEATTLE, Nov. 19.

Of extreme importance in this section is the order from Washington to cease all activities in aircraft production work in the camps and mills of the Northwest. It is estimated that more than $10,000,000 is invested in the industry, and plans are under way concerning the possibility of using much of this perfected organization and equipment in the airplane industry which is expected to continue. Many plants were wholly engaged in Government work, and it is feared the order may mean total suspension of their operations.

The abandonment of spruce production will release about 10,000 workers, and will be a tremendous factor in easing the labor shortage. Shipyards are demanding more men, and the non-essential industries that are expected to resume full activity will absorb large numbers.

Shipbuilders are planning to continue their activity. Most of the plants have Government contracts covering a period of one to two years, and many inquiries are being received from foreign corporations looking to Northwest yards for ship construction.

The Defiance Packing Co., New Westminster, B. C., plans the expenditure of about $150,000 in additions to the Clayquot Cold Storage Canning Co.'s plant and extensions to the wharf, recently acquired by the company.

The Asbestomine Co., Inc., Wenatchee, Wash., has been reorganized, and plans the erection of a factory to manufacture its asbestos products.

The Western Iron Works, formerly of Spokane, Wash., is moving its equipment to Anacortes, Wash., where a new building is being provided. The present structure is temporary, and a permanent building will be erected during the winter. The company manufactures tractors, farm trucks and gasoline locomotives, and has an extensive ship repair department.

The city of Astoria, Ore., contemplates the construction of a new water system at a cost of $500,000. A pipe line 16.5 miles long will be built.

The Puget Sound Navy Yard, Bremerton, Wash., it is stated, will go ahead with construction activities interfered with by the war. Included in the plans is a power plant and distributing system to cost $30,000.

San Francisco

SAN FRANCISCO, Nov. 19.

With the sudden cessation of hostilities the machine tool trade is experiencing a feeling of uncertainty. Most factory representatives state there is no indication that machinery will be lower in price or easier to obtain for some time, but jobbers appear to take a contrary view and are disinclined to give orders which a month ago would have been given freely, provided they could get deliveries. Shipyards continue busy, although they are gradually weeding out the less competent men. It is reported 1000 were dismissed from the yards about the bay in the past week. This brings to the front the labor question which is most serious on the coast. The Iron Trades Council, representing the men, has taken an appeal from the recent Macy award and notified the Foundrymen's Association and the Metal Trades Association that it expects the employers to pay this award together with retroactive wages until the appeal is settled. This the employers refuse to do, pointing out that the Macy award referred only to the shipbuilding plants. A meeting of a committee representing both sides has been called and an effort will be made to reach an agreement.

With the approach of peace it is expected that the demand for mining machinery will increase. Luning, Nev., reports a project to erect a smelter in that locality, and several mines near Placerville, Cal., are reported in the market for new equipment.

It is stated that the Mare Island shipyard has enough work on hand to keep the present force busy for the next two years. Preliminary work is under way for the new structural shops to be erected at a cost of $1,000,000.

It is reported that the Boden Automatic Hammer Co., Palo Alto, will remove its plant to Vallejo, where it will also manufacture marine machinery and the Murray concrete gun for pouring concrete.

Extensive car and locomotive shops, it is stated, are to be maintained at Sacramento by the Southern Pacific Co. The foundry will be the first building erected and work will begin as soon as the low land by the river is filled in.

The Anderson-Barngrover Co., San Jose, Cal., is clearing the ground to build another unit including a foundry and pattern shop for the manufacture of agricultural implements. Construction will begin as soon as a permit is issued.

The Universal Steel Wheel Co., Los Angeles, has been incorporated with a capital of $200,000 by W. O. Gates, W. B. Kerrick, L. L. Kelley and I. W. Bull.

Canada

TORONTO, Nov. 25.

The R. Bell Munition Works, Seaforth, Ont., has been instructed by the Imperial Munitions Board to cease work on all shells in initial operation. The company has begun work on an addition to its plant for the manufacture of farm machinery, gasoline tractors, etc., and expects to absorb a large proportion of the men for this work who will be thrown out of employment by the canceling of the shell contract.

Burrell D. Jones, in charge of the Canadian business of the Republic Motor Truck Co., 518 Yonge Street, Toronto, has announced that an American manufacturing concern specializing in motor trucks will locate a branch plant in Ontario, probably in Toronto. A factory will be secured immediately. It is planned to assemble between 4000 and 5000 motor trucks for the Canadian market. It is expected that the tops and bodies will be manufactured here.

The greater part of the plant of the T. E. Bissell Co., Elora, Ont., manufacturer of farm machinery, implements, etc., was destroyed by fire Nov. 19 with an estimated loss of $75,000. The company will rebuild, and will require new equipment.

The Consumers Metal Co., Ltd., will remove its head office from 14 St. John Street, Montreal, to the new building in course of erection on Twentieth Avenue, Lachine, Que.

Foundations are being constructed for a pumping station at Grand Lake, N. S., for the Dominion Iron & Steel Co., Sydney, N. S.

John Drake, Cairngorm, Ont., will rebuild his sawmill, recently destroyed by fire with a loss of $5,000, and is asking for prices on machinery and equipment.

A site has been purchased for the erection of a plant at Dundas, Ont., for the John Bertram & Sons Co., manufacturer of machine tools, etc. The present buildings will be demolished.

Plans have been prepared for the erection of a factory addition to cost $15,000 for the Canadian Westinghouse Co., Hamilton, Ont.

A. H. McDonald, Burnaby, B. C., will build a shingle mill at a cost of $6,500 to replace the one recently destroyed by fire. New machinery is required.

Plans are being prepared for the erection of a brick addition to the London, Ont., power station to cost $45,000. H. A. Brazier is engineer.

Plans are being prepared for the erection of a two-story addition to the plant of the Alloy Steel Works, Ltd., 400 Front Street East, Toronto.

Plans are in progress for a machine shop to cost $30,000 for the Pacific Construction Co., Coquitlam, B. C., to be erected at Vancouver. H. P. Simpson is manager.

The Morrow Screw & Nut Co., Ingersoll, Ont., has started work on an addition to cost $10,000.

The Timms Market Garden Co., Langley Prairie, B. C., will build a box factory to cost $30,000.

Foundations are being prepared for a one-story brick boiler house for the Peerless Hosiery Co., Adelaide Street, London, Ont., to cost $8,000.

The Town Council, Port Alberni, B. C., contemplates developing electric power at a cost of about $60,000. R. F. Blandy is clerk.

Plans are being prepared for an addition to the plant of the British Forgings, Ltd., Cherry Street, Toronto, to cost $8,000, also for a temporary munition building at 27 Atlantic Avenue to cost $4,000.

The Massey-Harris Co., Toronto, has purchased about 100 acres and the plant of the Toronto Structural Steel Co., Weston, Ont., which has been engaged in the manufacture of munitions for the past two years. It is the intention of the company to transfer the manufacture of gas engine tractors and cream separators from Toronto to the new plant, and employ a force of about 1000.

The Canadian Bond Hanger & Coupling Co., Ltd., is removing its plants from Alexandria, Ont., to its new factory at Villiers and Munitions streets, Toronto, where it has equipped a building of at least 100 per cent greater capacity. The company has acquired adjoining land giving facilities for unlimited expansion.

Government Purchases

WASHINGTON, Oct. 28.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, at an early date under schedules as follows: Schedule 7091½, 4 universal machines; 7092½, 4 milling machines; 7093½, 1 drilling machine; 7094½, 2 drilling machines; 7095½, 8 drilling machines, all for Alexandria, Va.; 7096½, Boston, 1 bracket trip hammer; 7098½, Boston, 1 heavy guillotine sheer; 7106½, various eastern yards, miscellaneous boiler and lap-welded tools; 7110½, Brooklyn, 1 boring and drilling machine, opening Dec. 2; 7111½, Washington, 1 threading machine; 7112½, Norfolk, Va., 3 engine lathes; 7130½, Alexandria, Va., 1 vertical miller; 7131½, Charleston, 1 double emery grinder, opening Dec. 2; 7140½, Washington, 2 vertical boring and turning mills; 7141½, 2 milling machines; 7142½, 1 milling machine; 7143½, 1 milling machine; 7144½, milling machine; and 7145½, milling machine, opening Nov. 29, all for Alexandria, Va.; 7149½, Philadelphia, 1 ash hoist engine; 7158½, Boston, 1 steam hoisting engine and 1 vertical steam boiler; 7161½, Washington, 1 bending set rolls; 7162½, Washington, 1 screw machine, opening Dec. 2; 7168½, Washington, 3 bench and portable drills, 1 center grinder and 2 endless belts; 7174½, Alexandria, Va., 2 air compressors, opening Dec. 6; 7175½, Washington, 24 motors, opening Dec. 2; 7179½, Brooklyn, 1 hydraulic press; 7180½, Norfolk, 1 milling machine; 7182½, Alexandria, Va., 6 radial drill machines, opening Nov. 29; 7183½, Boston, 1 squaring shears; 7201½, San Diego, 1 milling and drilling machine; 7206½, Philadelphia, 1 sensitive drill; 7210½, Brunswick, Ga., 1 knife grinder, 1 boring machine, 1 squaring shear and saw upkeep material; 7222½, Philadelphia, 2 electric trolley hoists; 7223½, Norfolk, 2 ash hoisting machines; 7229½, Washington, 2 centrifugal pumps; 7230½, Boston, furnishing and installing electric traveling crane; 7236½, f.o.b. works, miscellaneous ventilating sets; 7238½, f.o.b. works, 1 motor generator set, 3 transformers, motor, air compressor, tank, air receiver, pump, one 10-horsepower motor, 1 switch, 1 steel water tank and 1 motor generator set